
حمل الآن
مجانا وحصريا
المراجعة رقم (1)
اختبار شهر فبراير
ذاكرولى
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حمل الان حصريا

ALADWAA

Gem

Mathematics

للصف 2 الإعدادى

ALGEBRA

نماذج الأضواء الاسترشادية لشهر فبراير

العام الدراسى 2025

15 Marks

Model (1)

5

1 Choose the correct answer:

a Two times the square of the number x is ..... ($2x^2$, $2+x^2$, $\frac{x^2}{2}$, x^2)

b If the sum of the ages of Alaa and Soha now is 12 years, then the sum of their ages after 7 years equals ..... years. (19 , 5 , 16 , 23)

c The S.S. of the equation: $x^2 - 3x = 0$ in $\mathbb{R}$ is ..... ($\{0, 3\}$, $\{0\}$, $\{3\}$, $\emptyset$)

d If $x = -3$ is one of the roots of the equation: $x^2 - 2x - a = 0$, *then* a = ...
(−15 , 15 , 3 , 2)

e If $x^3 + m = (x + 3)(x^2 - 3x + 9)$, *then* m = ... (9 , 3 , 27 , 8)

10

2 Answer the following:

a If $(x + 2)$ is a factor of the expression: $x^2 - 5x - 14$, find the other factor.

.....

b If $x^2 - m + 14 = (x - 7)(x - 2)$, *then* find the value of m.

.....

.....

c If $x + y = 6$ and $y - x = 5$, *then* find the value of $x^2 - y^2$.

.....

d Factorize the following expression: $x^2 - x - 56$

.....

e Find the value of k which makes the expression: $4x^2 + kx + 16$ a perfect square.

.....

15 Marks

Model (2)

5

1 Choose the correct answer:

a The missing term in the expression: $16x^2 + \ldots\ldots xy + 25y^2$ to be a perfect square.

(20 , 40 , 16 , 25)

b $(x + 2)(x^2 - 2x + 4) = \ldots\ldots$ ($x^3 + 8$, $x^3 - 8$, $(x - 2)^3$, $(x + 2)^3$)

c $3x^2 - 9x - 12 = (3x + 3)(x - \ldots\ldots)$ (4 , −4 , 12 , −12)

d The expression: $x^2 + 5x + n$ can be factorized if n = $\ldots\ldots$

(12 , 7 , −14 , −2)

e Three times the cube of the number x is = $\ldots\ldots$

($3x^3$, $3 + x^3$, $\frac{x^3}{3}$, $(3x)^3$)

10

2 Answer the following:

a Find in $\mathbb{R}$ the S.S. of the following equation: $2x^2 + x - 15 = 0$

b If the side length of a square is $(x + 3)$, and its area = 16 cm^2, find its side length.

c What is the positive number if it is added to its square, the result will be 30?

d A real number, its twice increased its multiplicative inverse by 1, find the number.

e Find the value of m which makes the expression: $x^2 + mx + 49$ a perfect square.

Moedl (3)

15 Marks

5

1 Choose the correct answer:

a If the age of Ali 3 years ago was m years, then his age now is ..... years.

(3 – m , 3 + m , 3m , m ÷ 3)

b If $M^2 - a + 12 = (M - 4)(M - 3)$, *then* a = ... (–7m , 7M , 7 + M , 12M)

c If $x + y = 7$, $y - x = 2$, *then* $x^2 - y^2$ = ... (7 + 2 , 7 – 2 , 7 × –2 , 7 ÷ 2)

d If the expression: $x^2 + 6x + k$ is a perfect square, *then* k = ...

(6 , 3 , 9 , 12)

e The solution set of the equation: $x^3 + 16x = 0$ in $\mathbb{R}$ is = ...

({0 , 4 , –4} , {4 , –4} , {0} , {4})

10

2 Answer the following:

a Find in $\mathbb{R}$ the S.S. of the following equation: $x^2 - 7x + 12 = 0$

.....

b Factorize the following expressions completely:

(1) $bx + by + cx + cy$ (2) $xy + 2x + 6y + 12$

.....

.....

c Use the factorization to get the value of the following:

$(1.5)^2 + 2 \times 1.5 \times 5.5 + (5.5)^2$

.....

d What is the positive number if it is subtracted from its square, the result will be 56?

.....

e If $(x - 9)$ is a factor of the expression: $x^2 - 13x + 36$, find the other factor.

.....

15 Marks

Model (1)

5

1 Choose the correct answer:

a Two times the square of the number x is ..... ($2x^2$, $2+x^2$, $\frac{x^2}{2}$, x^2)

b If the sum of the ages of Alaa and Soha now is 12 years, then the sum of their ages after 7 years equals ..... years. (19 , 5 , 16 , 23)

c The S.S. of the equation: $x^2 - 3x = 0$ in $\mathbb{R}$ is ..... ($\{0, 3\}$, $\{0\}$, $\{3\}$, $\emptyset$)

d If $x = -3$ is one of the roots of the equation: $x^2 - 2x - a = 0$, *then* a = ...
(−15 , 15 , 3 , 2)

e If $x^3 + m = (x + 3)(x^2 - 3x + 9)$, *then* m = ... (9 , 3 , 27 , 8)

10

2 Answer the following:

a If $(x + 2)$ is a factor of the expression: $x^2 - 5x - 14$, find the other factor.

$\because x^2 - 5x - 14 = (x + 2) \times (x - 7)$

$\therefore$ the other factor is $(x - 7)$

b If $x^2 - m + 14 = (x - 7)(x - 2)$, *then* find the value of m.

To get the middle term

$(-2 \times x) + (-7 \times x) = -m$

$-2x - 7x$

$= -9x$ $\therefore$ $m = 9x$

c If $x + y = 6$ and $y - x = 5$, *then* find the value of $x^2 - y^2$.

$x^2 - y^2 = (x + y)(x - y)$

$= 6 \times -5$

$= -30$

d Factorize the following expression: $x^2 - x - 56$

$x^2 - x - 56 = (x - 8)(x + 7)$

$x = 8$ *or* $x = -7$

e Find the value of k which makes the expression: $4x^2 + kx + 16$ a perfect square.

To get a perfect square, the middle term must equal $\pm 2 \times \sqrt{\text{first term}} \times \sqrt{\text{third term}}$

Then, $kx = \pm 2 \times \sqrt{4x^2} \times \sqrt{16} = \pm 2 \times 2x \times 4 = \pm 16x$

$\therefore$ $kx = \pm 16x$ $\therefore$ $k = \pm 16$

15 Marks — Model (2)

5

1 Choose the correct answer:

a The missing term in the expression: $16x^2 + \ldots\ldots xy + 25y^2$ to be a perfect square.

(20 , **40** , 16 , 25)

b $(x+2)(x^2-2x+4) = \ldots\ldots$ (**x^3+8** , x^3-8 , $(x-2)^3$, $(x+2)^3$)

c $3x^2 - 9x - 12 = (3x+3)(x - \ldots\ldots)$ (**4** , −4 , 12 , −12)

d The expression: $x^2 + 5x + n$ can be factorized if n = $\ldots\ldots$

(12 , 7 , **−14** , −2)

e Three times the cube of the number x is = $\ldots\ldots$

(**$3x^3$** , $3 + x^3$, $\frac{x^3}{3}$, $(3x)^3$)

10

2 Answer the following:

a Find in $\mathbb{R}$ the S.S. of the following equation: $2x^2 + x - 15 = 0$

$2x^2 + x - 15 = 0$

$(2x-5)(x+3)$

$x = \frac{5}{2}$ or $x = -3$ ∴ The S.S. $= \{\frac{5}{2}, -3\}$

b If the side length of a square is $(x+3)$, and its area = 16 cm^2, find its side length.

Area of a square = side length × side length

∴ $16 = (x+3) \times (x+3)$

∴ $16 = (x+3)^2$ ∴ $x + 3 = \pm 4$ ∴ $x = 4 - 3$

∴ $x = 1$ ∴ then the side length = 4 cm

c What is the positive number if it is added to its square, the result will be 30?

Let the number be x

∴ $x^2 + x = 30$ ∴ $x^2 + x - 30 = 0$

∴ $(x+6)(x-5) = 0$ ∴ $x = -6$ (refused) or $x = 5$ ∴ the number is 5

d A real number, its twice increased its multiplicative inverse by 1, find the number.

Let the number be x

∴ $2x - \frac{1}{x} = 1$ ∴ $2x^2 - x - 1 = 0$

∴ $(2x+1)(x-1) = 0$ ∴ $x = -\frac{1}{2}$ or $x = 1$ ∴ the number is 1 or $-\frac{1}{2}$

e Find the value of m which makes the expression: $x^2 + mx + 49$ a perfect square.

To get a perfect square, the middle term must equal $\pm 2 \times \sqrt{\text{first term}} \times \sqrt{\text{third term}}$

Then, $mx = \pm 2 \times \sqrt{x^2} \times \sqrt{49} = \pm 2 \times x \times 7 = \pm 14x$

$\therefore\ mx = \pm 14x$ $\quad\quad$ $\therefore\ m = \pm 14$

15 Marks — Model (3)

5

1 Choose the correct answer:

a If the age of Ali 3 years ago was m years, then his age now is ..... years.

(3 – m , **3 + m** , 3m , m ÷ 3)

b If $M^2 - a + 12 = (M - 4)(M - 3)$, *then* a = ... (–7m , **7M** , 7 + M , 12M)

c If $x + y = 7,\ y - x = 2$, *then* $x^2 - y^2$ = ... (7 + 2 , 7 – 2 , **7 × –2** , 7 ÷ 2)

d If the expression: $x^2 + 6x + k$ is a perfect square, *then* k = ...

(6 , 3 , **9** , 12)

e The solution set of the equation: $x^3 + 16x = 0$ in $\mathbb{R}$ is = ...

({0 , 4 , –4} , {4 , –4} , **{0}** , {4})

10

2 Answer the following:

a Find in $\mathbb{R}$ the S.S. of the following equation: $x^2 - 7x + 12 = 0$

$x^2 - 7x + 12 = 0$

$(x - 4)(x - 3)$

$x = 4$ *or* $x = 3$ $\quad\quad$ $\therefore$ The S.S. $= \{4, 3\}$

b Factorize the following expressions completely:

(1) $bx + by + cx + cy$ $\quad\quad$ (2) $xy + 2x + 6y + 12$

(1) $bx + by + cx + cy = b(x + y) + c(x + y)$

$= (x + y)(b + c)$

(2) $xy + 2x + 6y + 12 = xy + 6y + 2x + 12$

$= y(x + 6) + 2(x + 6)$

$= (y + 2)(x + 6)$

c Use the factorization to get the value of the following:

$(1.5)^2 + 2 \times 1.5 \times 5.5 + (5.5)^2$

$(1.5)^2 + 2 \times 1.5 \times 5.5 + (5.5)^2$

$= (1.5 + 5.5)^2$

$= (7)^2 = 49$

d What is the positive number if it is subtracted from its square, the result will be 56?

Let the number be x

$\therefore x^2 - x = 56$ **$\therefore x^2 - x - 56 = 0$**

$(x - 8)(x + 7) = 0$ **$\therefore x = 8$** *or* **$x = -7$ (refused)** **$\therefore$ the number is 8.**

e If $(x - 9)$ is a factor of the expression: $x^2 - 13x + 36$, find the other factor.

$\therefore\ x^2 - 13x + 36 = (x - 9) \times (x - 4)$

$\therefore$ the other factor is $(x - 4)$.

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للصف 2 الإعدادى

GEOMETRY

نماذج الأضواء الاسترشادية لشهر فبراير

العام الدراسى 2025

15 Marks

Model (1)

5

1 Choose the correct answer:

a If the base length of a parallelogram is 9 cm and the corresponding height is 7 cm, then its area = ... cm^2 (36 , 63 , 45 , 54)

b The median of the triangle divides its surface into two triangles ..... .
(equal in perimeter , similar , equal in area , congruent)

c A triangle has a base length of 7 cm and its corresponding height is 4 cm, then its area equals ..... cm^2 (28 , 14 , 22 , 17)

d The parallelograms with bases equal in length and lying on a straight line, while the opposite sides to these bases are on another straight line are ..... .
(equal in perimeter , similar , equal in area , congruent)

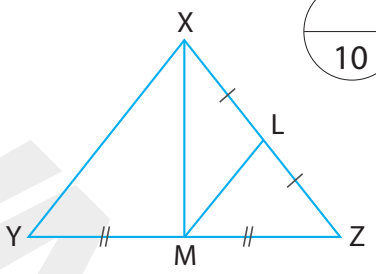
e ABCD is a parallelogram in which: AB = 8 cm, BC = 14 cm, and its greater height is 5 cm, then its area is ..... cm^2. (40 , 35 , 20 , 70)

2 Answer each of the following:

10

a XYZ is a triangle in which L , M are the midpoints of $\overline{XZ}$, $\overline{ZY}$ respectively.

Prove that: The area of $\Delta XML = \frac{1}{4}$ the area of ΔXYZ .



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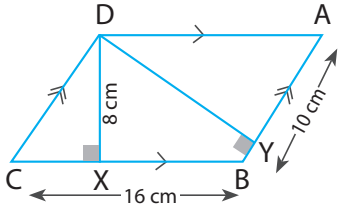
b ABCD is a parallelogram, AB = 10 cm, BC = 16 cm, DX = 8 cm.
Find the area of the parallelogram ABCD.



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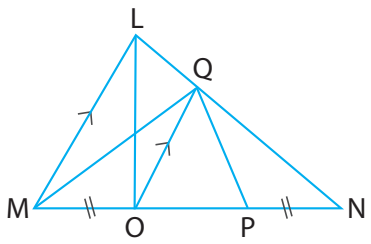
c In the opposite figure:

$\overline{LM}$ // $\overline{QO}$, PN = MO

Prove that: The area of ΔPQN = The area of ΔLOQ



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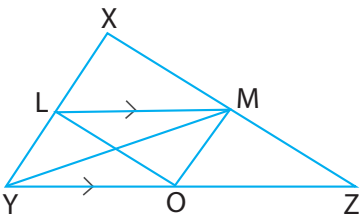
d In the opposite figure:

XYZ is a triangle, M ∈ $\overline{XZ}$, L ∈ $\overline{XY}$, O ∈ $\overline{YZ}$, $\overline{LM}$ // $\overline{YO}$

Prove that: The area of the figure XMOL = the area of ΔXMY.



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e A trapezium in which the lengths of the two parallel bases are 7 cm and 10 cm, and its height is 6 cm, find its area.

.....

.....

.....

15 Marks

Model (2)

1 Choose the correct answer:

5

a A triangle with an area of 36 cm^2, and its base length is 12 cm, then its corresponding height equals ..... cm. (4 , 5 , 6 , 7)

b The area of the rectangle whose dimensions are 9 cm and 5 cm ..... the area of the triangle whose base length is 8 cm and its corresponding height is 6 cm.

(> , < , = , ⩽)

c The parallelogram and the rectangle with a common base and lying between two parallel straight lines are ..... .

(equal in perimeter , similar , equal in area , congruent)

d If the area of a parallelogram is 60 cm^2 and the length of its base is 15 cm, then its corresponding height equals ..... cm. (3 , 4 , 5 , 6)

e The ratio between the area of a triangle and the area of a parallelogram with a common base where the vertex of the triangle lies on the side opposite to the common base is ..... : ..... .

(1 : 2 , 2 : 1 , 1 : 3 , 3 : 1)

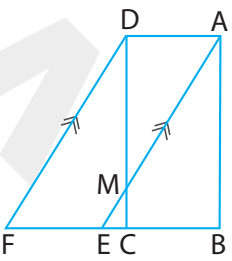
2 Answer each of the following:

10

a In the opposite figure:

ABCD is a rectangle, $\overline{AE} \parallel \overline{DF}$, $E \in \overrightarrow{BC}$, $F \in \overrightarrow{BC}$.

Prove that: The area of figure ABCM = The area of figure DMEF.



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b A rhombus whose perimeter is 32 cm, and its height is 3 cm, then find its area.

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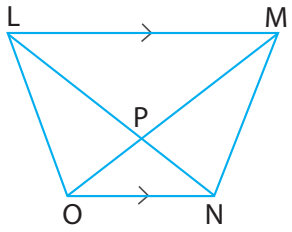
c In the opposite figure:

LMNO is a quadrilateral, $\overline{LM}$ // $\overline{ON}$.

Prove that: The area of ΔMPN = The area of ΔLPO



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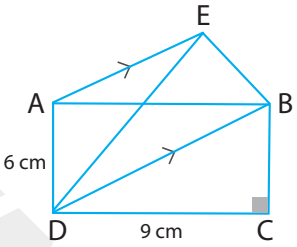
d In the opposite figure:

ABCD is a rectangle, $\overline{AE}$ // $\overline{DB}$, find the area of ΔEBD.



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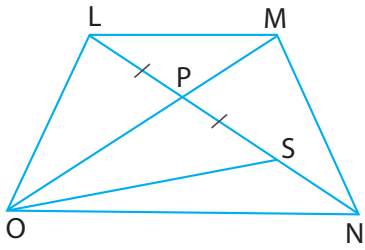
e LMNO is a quadrilateral whose diagonals intersect at P

, $S \in \overline{PN}$ where PS = PL

, the area of ΔMPN = the area of ΔOPS.

Prove that: $\overline{ML} \,//\, \overline{NO}$



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15 Marks

Model (3)

5

1 Choose the correct answer:

a A trapezium its area is 45 cm^2, and its height is 5 cm, then the length of its middle base is ..... cm. (45 , 9 , 5 , 6)

b A rhombus whose diagonal lengths are 8 cm and 6 cm, and its height is 4.8 cm, then its side length is ..... cm. (5 , 6 , 10 , 12)

c If the area of a square is 32 cm^2, then the length of its diagonal is ..... cm. (6 , 32 , 8 , 16)

d A triangle has a base of length = 8 cm, and its corresponding height = 5 cm, then its area = ... cm^2. (13 , 40 , 36 , 20)

e A parallelogram in which the lengths of two adjacent sides are 4 cm and 6 cm , and its smaller height is 2 cm, then its area = ... cm^2. (8 , 12 , 28 , 48)

10

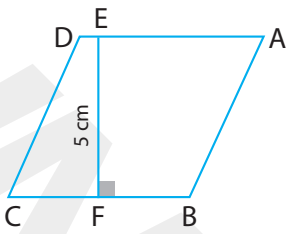
2 Answer each of the following:

a In the opposite figure:

If the area of the parallelogram ABCD = 620 cm^2,

and the length of EF = 5 cm.

Find: The length of $\overline{BC}$.



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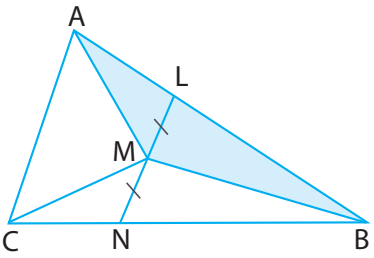
b In the opposite figure:

M is the midpoint of $\overline{LN}$,

the area of ΔABM = the area of ΔCMB,

Prove that : $\overline{AC}$ // $\overline{LN}$



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c A trapezium in which the lengths of the two parallel bases are 8 cm, and 10 cm, and its height is 5 cm. Find its area.

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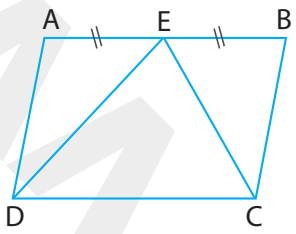
d In the opposite figure:

ABCD is a parallelogram, E is midpoint of $\overline{AB}$,

and the area of triangle AED is 40 cm^2.

Find the area of ΔEDC.



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e If ABCD is a parallelogram, its area is 120 cm^2, then find the area of triangle ABC.

.....

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.....

15 Marks

Model (1)

5

1 Choose the correct answer:

a If the base length of a parallelogram is 9 cm and the corresponding height is 7 cm, then its area = ... cm^2 (36 , **63** , 45 , 54)

b The median of the triangle divides its surface into two triangles ..... .
(equal in perimeter , similar , **equal in area** , congruent)

c A triangle has a base length of 7 cm and its corresponding height is 4 cm, then its area equals ..... cm^2 (28 , **14** , 22 , 17)

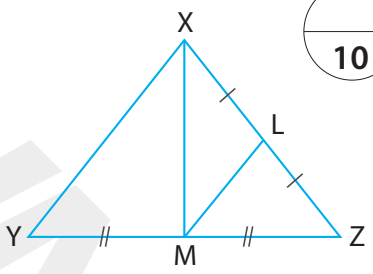
d The parallelograms with bases equal in length and lying on a straight line, while the opposite sides to these bases are on another straight line are ..... .
(equal in perimeter , similar , **equal in area** , congruent)

e ABCD is a parallelogram in which: AB = 8 cm, BC = 14 cm, and its greater height is 5 cm, then its area is ..... cm^2. (**40** , 35 , 20 , 70)

2 Answer each of the following:

10

a XYZ is a triangle in which L , M are the midpoints of $\overline{XZ}$, $\overline{ZY}$ respectively.



Prove that: The area of ΔXML = $\frac{1}{4}$ the area of ΔXYZ .

Answer:

∵ $\overline{XM}$ is a median in the triangle XYZ,

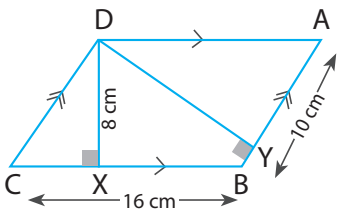
∴ The area of ΔXMZ = $\frac{1}{2}$ the area of ΔXYZ ——— (1)

, ∵ $\overline{ML}$ is a median in the triangle XMZ.

∴ The area of ΔXML = $\frac{1}{2}$ the area of ΔXMZ ——— (2)

From (1) and (2): The area of ΔXML = $\frac{1}{4}$ the area of ΔXYZ

b ABCD is a parallelogram, AB = 10 cm, BC = 16 cm, DX = 8 cm.
Find the area of the parallelogram ABCD.

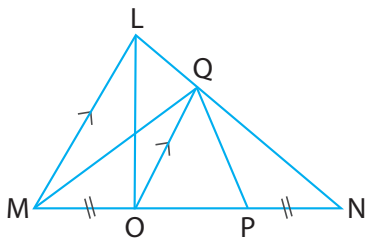


Answer:

The area of the parallelogram ABCD = The base length × its corresponding height

= 16 × 8 = 128 cm^2

c In the opposite figure:



$\overline{LM}$ // $\overline{QO}$, PN = MO

Prove that: The area of ΔPQN = The area of ΔLOQ

Answer:

∵ ΔΔMOQ and NPQ have equal bases in length and they are drawn on one straight line and they have the same vertex Q.

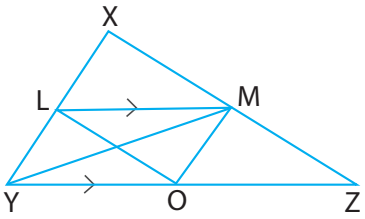
∴ The area of ΔMOQ = The area of ΔNPQ ———— (1)

∵ ΔΔLOQ and MOQ have the common base $\overline{OQ}$, $\overline{LM}$ // $\overline{QO}$

∴ The area of ΔLOQ = The area of ΔMOQ ———— (2)

From (1) and (2): The area of ΔPQN = the area of ΔLOQ

d In the opposite figure:



XYZ is a triangle, M ∈ $\overline{XZ}$, L ∈ $\overline{XY}$, O ∈ $\overline{YZ}$, $\overline{LM}$ // $\overline{YO}$

Prove that: The area of the figure XMOL = the area of ΔXMY.

Answer:

∵ ΔΔLMY and LMO have common base $\overline{LM}$, $\overline{LM}$ // $\overline{YO}$

∴ The area of ΔLMY = The area of ΔLMO

Adding the area of ΔXML to both areas.

∴ The area of the figure XMOL = the area of ΔXMY

e A trapezium in which the lengths of the two parallel bases are 7 cm and 10 cm, and its height is 6 cm, find its area.

Answer:

The area of trapezium = half the sum of lengths of the two parallel bases × height

$$= \frac{1}{2} \times (7 + 10) \times 6$$

$$= \frac{1}{2} \times 17 \times 6$$

$$= 51 \text{ cm}^2$$

15 Marks

Model (2)

5

1 Choose the correct answer:

a A triangle with an area of 36 cm^2, and its base length is 12 cm, then its corresponding height equals ..... cm. (4 , 5 , **6** , 7)

b The area of the rectangle whose dimensions are 9 cm and 5 cm ..... the area of the triangle whose base length is 8 cm and its corresponding height is 6 cm.
(**>** , < , = , ⩽)

c The parallelogram and the rectangle with a common base and lying between two parallel straight lines are ..... .
(equal in perimeter , similar , **equal in area** , congruent)

d If the area of a parallelogram is 60 cm^2 and the length of its base is 15 cm, then its corresponding height equals ..... cm. (3 , **4** , 5 , 6)

e The ratio between the area of a triangle and the area of a parallelogram with a common base where the vertex of the triangle lies on the side opposite to the common base is ..... : ..... .
(**1 : 2** , 2 : 1 , 1 : 3 , 3 : 1)

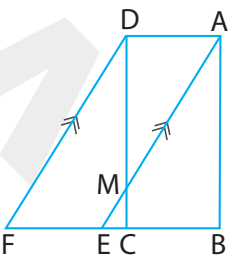
10

2 Answer each of the following:

a In the opposite figure:

ABCD is a rectangle, $\overline{AE} \parallel \overline{DF}$, $E \in \overrightarrow{BC}$, $F \in \overrightarrow{BC}$.

Prove that: The area of figure ABCM = The area of figure DMEF.



Answer:

∵ ABCD is a rectangle. ∴ $\overline{AD} \parallel \overline{BC}$, $\overline{AD} \parallel \overline{EF}$

, ∵ $\overline{AE} \parallel \overline{DF}$ ∴ AEFD is a parallelogram.

∵ the rectangle ABCD and the parallelogram AEFD have a common base $\overline{AD}$, $\overline{AD} \parallel \overline{EF}$

∴ The area of rectangle ABCD = the area of parallelogram AEFD

By subtracting the area of triangle AMD from both sides

∴ The area of figure ABCM = The area of figure DMEF

b A rhombus whose perimeter is 32 cm, and its height is 3 cm, then find its area.

Answer:

The perimeter of the rhombus = the side length × 4

The side length = The perimeter of the rhombus ÷ 4

$= 32 \div 4 = 8$ cm

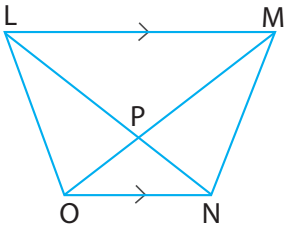
The area of rhombus = the side length × the height

$= 8 \times 3 = 24$ cm^2

c In the opposite figure:

LMNO is a quadrilateral, $\overline{LM}$ // $\overline{ON}$.

Prove that: The area of ΔMPN = The area of ΔLPO



Answer:

∵ ΔΔMNO, LNO have a common side $\overline{ON}$, $\overline{LM}$ // $\overline{ON}$.

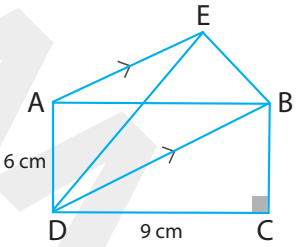
∴ The area of ΔMNO= The area of ΔLNO

By subtracting the area of ΔPNO from both sides

∴ The area of Δ MPN = The area of ΔLPO

d In the opposite figure:

ABCD is a rectangle, $\overline{AE}$ // $\overline{DB}$, find the area of ΔEBD.



Answer:

∵ $\overline{DB}$ is a diagonal in the rectangle ABCD.

∴ Area of Δ ABD = $\frac{1}{2}$ Area of the rectangle ABCD

$= \frac{1}{2} \times 6 \times 9 = 27$ cm^2

∵ ΔΔABD, EBD have a common base $\overline{BD}$, $\overline{AE}$ // $\overline{BD}$

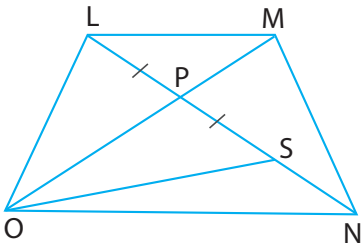
∴ The area of ΔEBD = The area of ΔABD = 27 cm^2

e LMNO is a quadrilateral whose diagonals intersect at P

, S ∈ $\overline{PN}$ where PS = PL

, the area of ΔMPN = the area of ΔOPS.

Prove that: $\overline{ML}$ // $\overline{NO}$



Answer:

∵ PS = PL ∴ $\overline{OP}$ is a median in ΔLOS .

∴ the area of ΔLOP = the area of ΔSOP ——— (1)

, ∵ the area of ΔMPN = the area of ΔOPS ——— (2)

From (1) and (2)

∴ the area of ΔMPN = the area of ΔLOP

By adding the area of ΔLPM to both sides

, ∴ the area of ΔMLO = the area of ΔMLN.

and the two triangles have a common base $\overline{LM}$

∴ $\overline{ML}$ // $\overline{NO}$

15 Marks

Model (3)

1 Choose the correct answer:

5

a A trapezium its area is 45 cm^2, and its height is 5 cm, then the length of its middle base is ..... cm. (45 , **9** , 5 , 6)

b A rhombus whose diagonal lengths are 8 cm and 6 cm, and its height is 4.8 cm, then its side length is ..... cm. (**5** , 6 , 10 , 12)

c If the area of a square is 32 cm^2, then the length of its diagonal is ..... cm. (6 , 32 , **8** , 16)

d A triangle has a base of length = 8 cm, and its corresponding height = 5 cm, then its area = ... cm^2. (13 , 40 , 36 , **20**)

e A parallelogram in which the lengths of two adjacent sides are 4 cm and 6 cm , and its smaller height is 2 cm, then its area = ... cm^2. (8 , **12** , 28 , 48)

2 Answer each of the following:

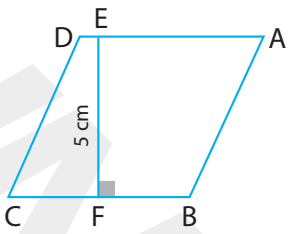
10

a In the opposite figure:

If the area of the parallelogram ABCD = 620 cm^2,

and the length of EF = 5 cm.

Find: The length of $\overline{BC}$.



Answer:

The area of parallelogram = the length of the base × its corresponding height

620 = Length of $\overline{BC}$ × Length of $\overline{EF}$

620 = BC × 5

BC = 620 ÷ 5

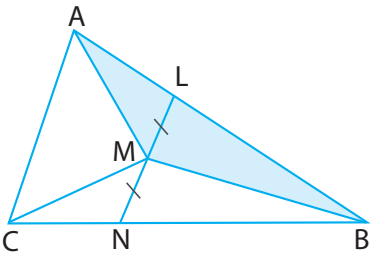
BC = 124 cm

b In the opposite figure:

M is the midpoint of $\overline{LN}$,

the area of ΔABM = the area of ΔCMB,

Prove that : $\overline{AC}$ // $\overline{LN}$



Answer:

∵ M is the midpoint of $\overline{LN}$.

∴ The area of ΔBLM = The area of ΔBNM ——— (1)

the area of ΔABM = the area of ΔCMB ——— (2)

Subtracting (1) from (2)

∴ The area of ΔABM – the area of ΔBLM

= the area of ΔCMB – the area of ΔBMN

∴ The area of ΔALM = the area of ΔCNM

∵ M is the midpoint of $\overline{LN}$.

∴ $\overline{AC}$ // $\overline{LN}$

c A trapezium in which the lengths of the two parallel bases are 8 cm, and 10 cm, and its height is 5 cm. Find its area.

Answer:

Area of trapezium = half the sum of lengths of the two parallel bases × height

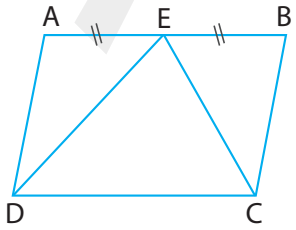
$$= \frac{1}{2}(8 + 10) \times 5 = 45 \text{ cm}^2$$

d In the opposite figure:

ABCD is a parallelogram, E is midpoint of $\overline{AB}$,

and the area of triangle AED is 40 cm^2.

Find the area of ΔEDC.



Answer:

∵ ΔΔEBC , EAD have equal sides (EB = EA).

∵ ABCD is a parallelogram, $\overline{AB}$ // $\overline{DC}$

∴ Area of ΔAED = Area of ΔEBC = 40 cm^2

∴ Area of ΔEDC = 40 + 40 = 80 cm^2

e If ABCD is a parallelogram, its area is 120 cm^2, then find the area of triangle ABC.

Answer:

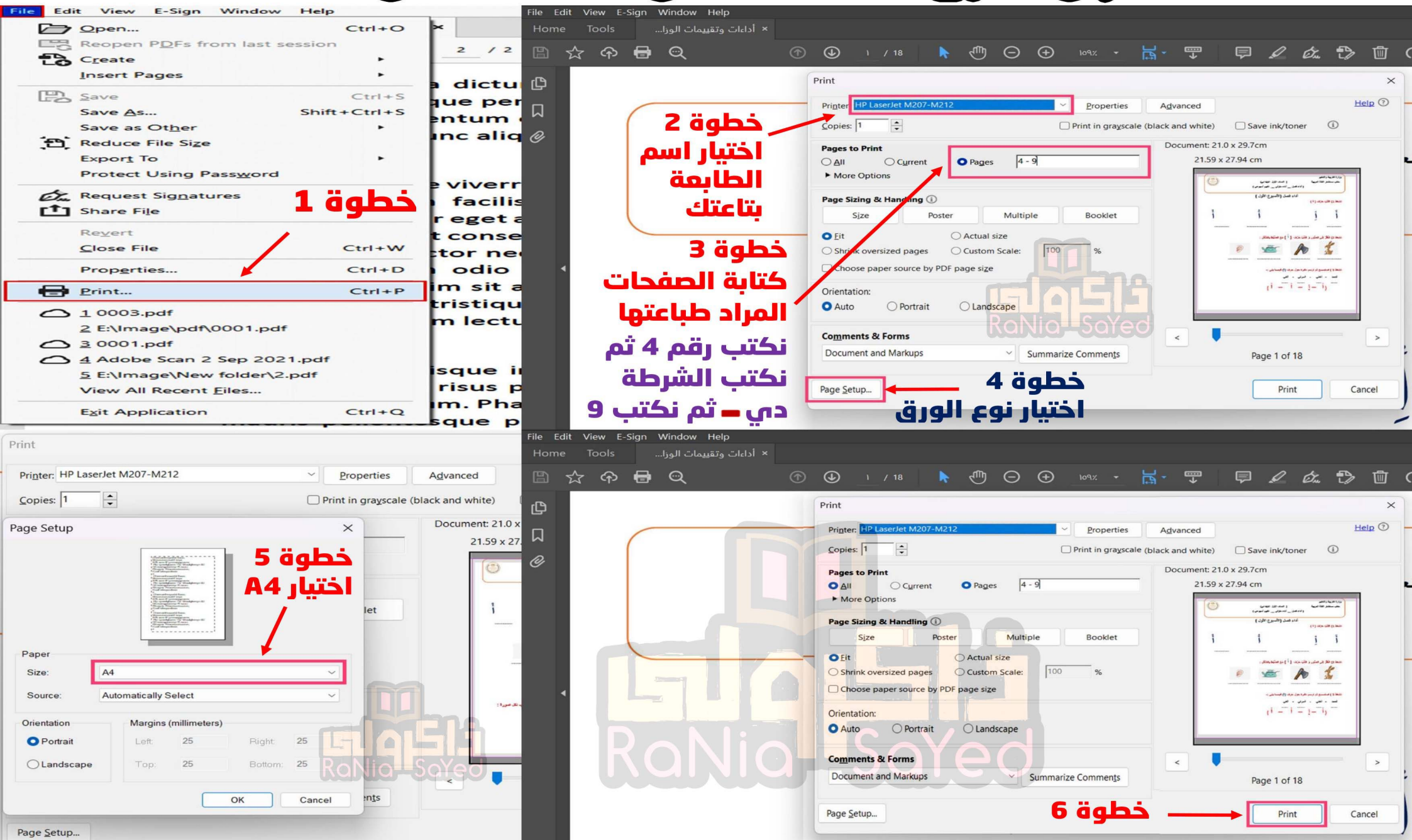
$\because$ The area of a triangle is equal to half the area of a parallelogram if they have a common base lying on one of two parallel straight lines including them.

$\therefore$ The area of triangle ABC $= \frac{1}{2} \times$ the area of parallelogram ABCD (Have a common base $\overline{BC}$)

$= \frac{1}{2} \times 120 = 60\ cm^2$

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9



المراجعة رقم (2)

اختبار شهر فبراير

Monthly Tests

on Algebra and Statistics

March tests

Test 1

Total mark 10

Answer the following questions :

1 Choose the correct answer from the given ones : (3 marks)

1 If $x - y = 5$, $x + y = 3$, then $x^2 - y^2 =$ .....

(a) 8 (b) 15 (c) 2 (d) $\frac{5}{3}$

2 Twice the square of the number x is .....

(a) $(2x)^2$ (b) $4x^2$ (c) $2x^2$ (d) $2x$

3 The expression : $x^2 - 5x + c$ is factorizable when c = ...

(a) 7 (b) 8 (c) – 3 (d) 6

---

2 Complete : (3 marks)

1 If $(x + 5)$ is a factor of the expression : $2x^2 + 13x + 15$, then the other factor is .....

2 If the expression : $9x^2 + kx + 25$ is a perfect square , then k = ...

3 The S.S. of the equation : $x(x + 1) = 0$ in $\mathbb{R}$ is .....

---

3 Factorize : (2 marks)

1 $x^3 - 8$

2 $ax - 5x + 3a - 15$

---

4 A real number is added to its square and the result is 12 (2 marks)

What is the number ?

Test 2

Total mark 10

Answer the following questions :

1 Choose the correct answer from the given ones : (3 marks)

1 The expression : a $x^2 + 24x + 9$ is a perfect square , then a = ...

(a) 25 (b) 8 (c) 16 (d) 4

2 The S.S. of the equation : $x^2 + 9 = 0$ in $\mathbb{R}$ is .....

(a) $\{3\}$ (b) $\{-3\}$ (c) $\{3, -3\}$ (d) $\varnothing$

3 If the age of Samch 5 years ago was x years , then his age now is ..... years.

(a) $x - 5$ (b) $x + 5$ (c) $5 - x$ (d) $5x$

2 Complete : (3 marks)

1 If $x^2 + \ell - 9 = (x - 3)(x + 3)$, then ℓ = ...

2 If $x = 1$ is a root of the equation : $x^2 - 5x + 4 = 0$, then the other root is .....

3 If $a^3 + b^3 = 9$, $a^2 - ab + b^2 = 3$, then $a + b$ = ...

3 Use the factorization to find : $(98)^2 - 4$ (2 marks)

4 Factorize : (2 marks)

1 $3x^2 + 7x + 2$

2 $x^4 + 4y^4$

Monthly Tests on Geometry

March tests ? on Geometry

Test 1

Total mark: 10

Answer the following questions :

1 Choose the correct answer from the given ones : (3 Marks)

1 The area of the rhombus of diagonal lengths 6 cm. , 8 cm. is ..... $cm.^2$

(a) 48 (b) 14 (c) 24 (d) 28

2 The area of a rectangle is 40 $cm.^2$ and its length 8 cm. , then its width ..... cm.

(a) 32 (b) 5 (c) 48 (d) 320

3 If the lengths of two adjacent sides of a parallelogram are 10 cm. , 8 cm. and the smaller height 4 cm. , then its area equals ..... $cm.^2$

(a) 32 (b) 40 (c) 5 (d) 36

---

2 Complete : (3 Marks)

1 Surfaces of two parallelograms with common base and between two parallel straight lines , one is carrying this base are .....

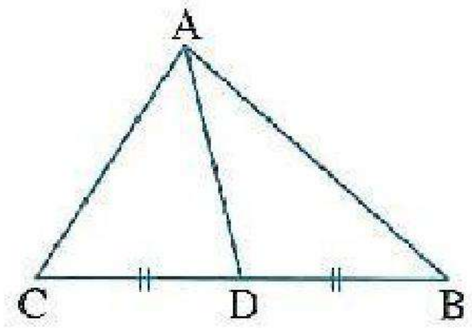
2 A square of area 50 $cm.^2$, then its diagonal length equal ..... cm.

3 **In the opposite figure :**

In Δ ABC : D is the midpoint of $\overline{BC}$

, the area of Δ ABD = 10 $cm.^2$

, then the area of Δ ABC = ... $cm.^2$



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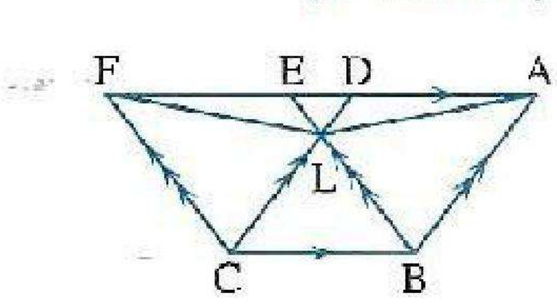
3 In the opposite figure : (2 Marks)

ABCD , EBCF are two parallelograms

, $\overline{BE} \cap \overline{CD} = \{L\}$, $D \in \overline{AF}$

, $E \in \overline{AF}$

Prove that : The area of Δ ABL = the area of Δ FCL



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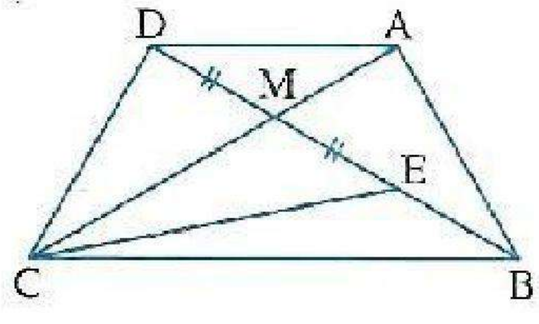
4 In the opposite figure : (2 Marks)

ABCD is a quadrilateral , its diagonals intersect at M

, $E \in \overline{BM}$ where ME = MD

, the area of Δ AMB = the area of Δ CME

Prove that : $\overline{AD} \parallel \overline{BC}$



Test 2

Total mark 10

Answer the following questions :

1 Choose the correct answer from the given ones : (3 Marks)

1 The area of triangle = ... of the length of the base × its corresponding height.

(a) $\frac{1}{4}$ (b) $\frac{1}{3}$ (c) twice (d) $\frac{1}{2}$

2 If the lengths of the two parallel bases of a trapezium are 15 cm. , 11 cm. , then the length of its middle base is ..... cm.

(a) 4 (b) 26 (c) 13 (d) 12

3 The ratio between the area of the triangle and the area of the parallelogram which have a common base and between two parallel straight lines is .....

(a) 1 : 3 (b) 2 : 4 (c) 2 : 1 (d) 1 : 1

2 Complete : (3 Marks)

1 The area of the parallelogram = ... × .....

2 If ABCD is a parallelogram of area 100 $cm.^2$, $E \in \overline{AD}$, then the area of Δ EBC = ...

3 A rhombus of area 30 $cm.^2$ and side length 6 cm. , then its height equals ..... cm.

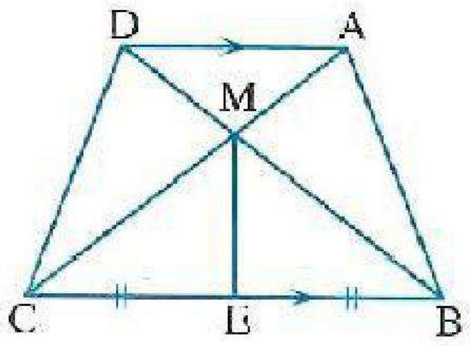
3 In the opposite figure : (2 Marks)

$\overline{AD} // \overline{BC}$, $\overline{AC} \cap \overline{BD} = \{M\}$

, E is the midpoint of $\overline{BC}$

Prove that :

The area of the figure ABEM = the area of the figure DCEM



4 In the opposite figure : (2 Marks)

ABCD is a rectangle , ABEF is a parallelogram

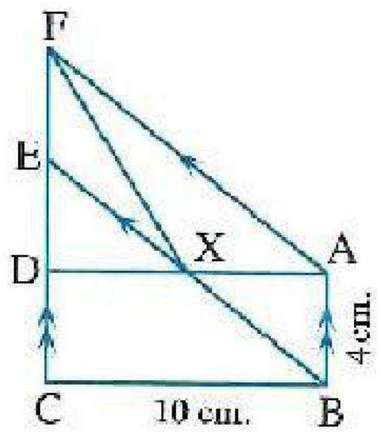
, $D \in \overline{CF}$, $E \in \overline{CF}$, $X \in \overline{BE}$

, AB = 4 cm. , BC = 10 cm.

Find :

1 Area of ▱ ABEF

2 Area of Δ XAF



Test 1

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If $x^2 + k x + 36$ is a perfect square , then k = ...

(a) ± 6 (b) ± 8 (c) ± 12 (d) ± 18

2 If the expression : $x^2 + k x + 2$ can be factorized , then k may be equal to .....

(a) 3 (b) -1 (c) 1 (d) 0

3 If $(2x + 3)$ is a factor of the expression : $2x^2 - x - 6$, then the second factor is .....

(a) $x - 6$ (b) $x - 2$ (c) $x + 6$ (d) $x + 2$

2 Factorize each of the following : (2 marks)

(a) $2x^3 - 8x$

(b) $x^3 + 8$

Test 2

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If $x^2 - y^2 = 12$, $x + y = 3$, then $x - y$ = ...

(a) $\sqrt{3}$ (b) 4 (c) 36 (d) ± 2

2 If the expression : $a x^2 + 36x + 81$ is a perfect square , then a = ...

(a) 2 (b) 4 (c) 8 (d) 16

3 If $x^2 + a = (x - 5)(x + 5)$, then a = ...

(a) 5 (b) 25 (c) -25 (d) ± 25

2 Factorize each of the following : (2 marks)

(a) $2x^2 - 5x + 2$

(b) $4x^2 - 25y^2$

Test 3

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If $a^2 + 2ab + b^2 = 25$, then $a + b =$ .....

ⓐ -5 ⓑ 5 ⓒ ± 5 ⓓ 6

2 If $2x^2 - 5x + a = (2x - 3)(x - 1)$, then $a =$ .....

ⓐ 2 ⓑ 3 ⓒ -3 ⓓ 5

3 If $(x + y)^2 = 36$, $xy = 9$, then $x^2 + y^2 =$ .....

ⓐ 4 ⓑ 27 ⓒ 18 ⓓ 45

2 Use factorization to get the value of each of the following : (2 marks)

(a) $(87)^2 + 2 \times 13 \times 87 + (13)^2$

(b) $(78)^2 - (77)^2$

Test 4

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If $x + y = 4$, $x - y = 2$, then $x^2 - y^2 =$ .....

ⓐ 2 ⓑ 4 ⓒ 6 ⓓ 8

2 If $(x + 8)$ is a factor of the expression : $x^2 + 6x - 16$, then the other factor is .....

ⓐ $x - 2$ ⓑ $x - 4$ ⓒ $x + 2$ ⓓ $x + 4$

3 If the expression : $x^2 + 14x + b$ is a perfect square , then $b =$ .....

ⓐ 2 ⓑ 7 ⓒ 14 ⓓ 49

2 The area of a rectangle is $(2x^2 + 19x + 35)$ cm.^{2} (2 marks)

Find two possible dimensions of the rectangle in terms of x , then find its perimeter as $x = 3$

Test 5

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If $a^2 - b^2 = 20$, $a + b = 5$, then $a^2 - 2ab + b^2 =$ .....

ⓐ 4 ⓑ 5 ⓒ 20 ⓓ 16

2 If the expression : $x^2 + bx - 10$ can be factorized , then b may be equal to .....

ⓐ 3 ⓑ 2 ⓒ 1 ⓓ -1

3 If $x^3 + 27 = (x + 3)(x^2 + k + 9)$, then k = ...

ⓐ $-6x$ ⓑ $-3x$ ⓒ $3x$ ⓓ $6x$

2 Factorize each of the following : (2 marks)

(a) $3x^2 - 15x + 12$

(b) $\frac{1}{2}x^3 - 4$

Test 1

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 If the area of the triangle is 24 cm^2 and its height is 8 cm. , then the length of the corresponding base equals .....

ⓐ 16 cm. ⓑ 6 cm. ⓒ 3 cm. ⓓ 2 cm.

2 If the lengths of two adjacent sides of a parallelogram are 8 cm. and 10 cm. and its greater height is 5 cm. , then its area = ...

ⓐ 80 cm^2 ⓑ 50 cm^2 ⓒ 40 cm^2 ⓓ 18 cm^2

3 The median of the triangle divides its surface into two triangles .....

ⓐ congruent. ⓑ equal in area.

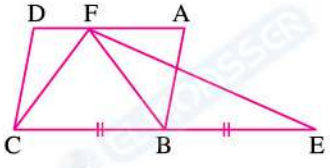
ⓒ equal in perimeter. ⓓ similar.

2 In the opposite figure : (2 marks)

ABCD is a parallelogram

, $E \in \overrightarrow{CB}$, where BC = BE

Prove that : The area of Δ EFC = The area of $\square$ ABCD



Test 2

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 The ratio between the area of the triangle and the area of the parallelogram whose base is common and are included between two parallel straight lines = ...

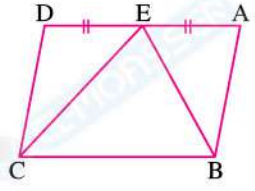
ⓐ 1 : 2 ⓑ 1 : 3 ⓒ 2 : 1 ⓓ 2 : 3

2 ABC is a triangle , $\overline{AD}$ is a median , then the area of Δ ABC = ...

ⓐ the area of Δ ABD ⓑ the area of Δ ACD

ⓒ 2 the area of Δ ABD ⓓ 3 the area of Δ ACD

3 **In the opposite figure :**



The area of the parallelogram ABCD = 24 cm^2

, then the area of Δ ABE = ... cm^2

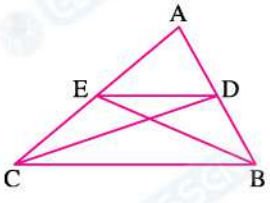
ⓐ 24 ⓑ 12

ⓒ 8 ⓓ 6

2 In the opposite figure : (2 marks)

If area of Δ ADC = area of Δ AEB

Prove that : $\overline{DE}$ // $\overline{BC}$



Test 3

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 ABCD is a parallelogram with area 100 cm^2 and $E \in \overline{AD}$, then the area of Δ EBC = ...

(a) 50 (b) 60 (c) 100 (d) 200

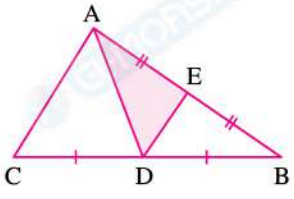
2 If ABCD is a parallelogram in which , AB = 5 cm. , BC = 10 cm. and its smaller height is 4 cm. , then its greater height equals .....

(a) 2 cm. (b) 4 cm.

(c) 8 cm. (d) 10 cm.

3 **In the opposite figure :**

If the area of Δ ABC = 24 cm^2 , then the area of Δ ADE = ...



(a) 6 cm^2 (b) 12 cm^2

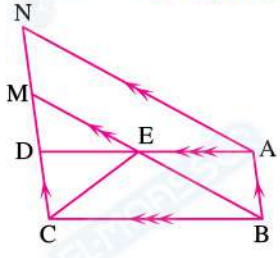
(c) 24 cm^2 (d) 48 cm^2

2 In the opposite figure : (2 marks)

ABCD and ABMN are two parallelograms.

Prove that :

The area of Δ EBC = $\frac{1}{2}$ the area of $\square$ ABMN



Test 4

Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 The triangle whose base length 7 cm. and its area is 28 $cm.^2$, then the corresponding height equals .....

(a) 2 (b) 4 (c) 6 (d) 8

2 If the area of ▱ ABCD = 48 cm^2 , then the area of Δ ABC = ...

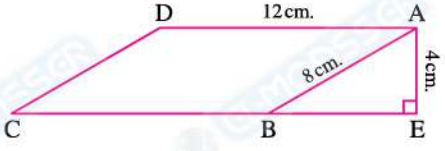
(a) 96 (b) 48

(c) 24 (d) 12

3 **In the opposite figure :**

ABCD is a parallelogram

, then area of ▱ ABCD = ...



(a) 32 (b) 16

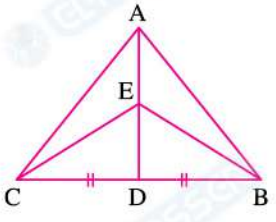
(c) 48 (d) 24

2 In the opposite figure : (2 marks)

D is midpoint of $\overline{BC}$, $E \in \overline{AD}$

Prove that :

The area of Δ ABE = the area of Δ ACE



Test 5

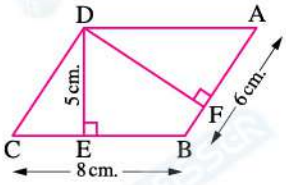
Total mark 5

1 Choose the correct answer from those given : (3 marks)

1 In the opposite figure :

ABCD is a parallelogram

, then DF = ...



(a) 40 cm. (b) $6\frac{2}{3}$ cm.

(c) 6 cm. (d) 30 cm.

2 The area of a right-angled triangle in which the lengths of the sides of the right angle are 8 cm. and 13 cm. equals .....

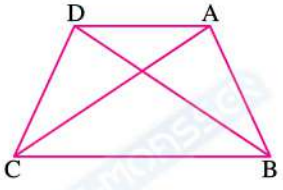
(a) 104 cm^2 (b) 52 cm^2

(c) 26 cm^2 (d) 202 cm^2

3 In the opposite figure :

If the area of Δ ABC = The area of Δ DBC

, then .....



(a) $\overline{AB}$ // $\overline{CD}$ (b) AB = CD

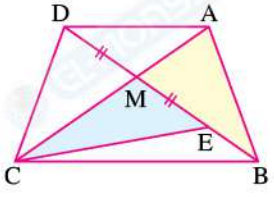
(c) $\overline{AD}$ // $\overline{BC}$ (d) AD = BC

2 In the opposite figure : (2 marks)

ME = MD

The area of Δ AMB = the area of Δ CME

Prove that : $\overline{AD}$ // $\overline{BC}$



Answers of Test 1

1 1 (c) 2 (a) 3 (b)

2 **(a)** $2x(x^2 - 4) = 2x(x - 2)(x + 2)$

(b) $(x + 2)(x^2 - 2x + 4)$

Answers of Test 2

1 1 (b) 2 (b) 3 (c)

2 **(a)** $(2x - 1)(x - 2)$

(b) $(2x - 5y)(2x + 5y)$

Answers of Test 3

1 1 (c) 2 (b) 3 (c)

2 **(a)** $(87 + 13)^2 = 100^2 = 10000$

(b) $(78 - 77)(78 + 77) = 1 \times 155 = 155$

Answers of Test 4

1 1 (d) 2 (a) 3 (d)

2 $\because 2x^2 + 19x + 35 = (2x + 5)(x + 7)$

$\therefore$ The two dimensions are $(2x + 5)$ cm. $(x + 7)$ cm.

when $x = 3$, then the two dimensions are 11 cm. and 10 cm.

, the perimeter = $2(11 + 10) = 42$ cm.

Answers of Test 5

1 1 (d) 2 (a) 3 (b)

2 **(a)** $3(x^2 - 5x + 4) = 3(x - 4)(x - 1)$

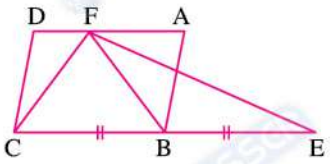
(b) $\frac{1}{2}(x^3 - 8) = \frac{1}{2}(x - 2)(x^2 + 2x + 4)$

Answers of Test 1

1 1 (b) 2 (c) 3 (b)

2 ∵ Δ BFC , ▱ ABCD have the common base $\overline{BC}$

, ∵ F ∈ $\overline{AD}$



∴ The area of Δ BFC = $\frac{1}{2}$ the area of ▱ ABCD(1)

∵ $\overline{FB}$ is a median in Δ FEC

∴ The area of Δ BFC = $\frac{1}{2}$ the area of Δ FEC (2)

From (1) and (2) :

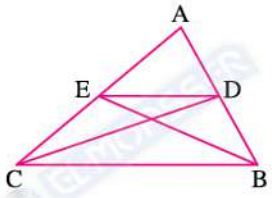
∴ The area of Δ FEC = The area of ▱ ABCD (Q.E.D.)

Answers of Test 2

1 1 (a) 2 (c) 3 (d)

2 ∵ The area of Δ ABE = the area of Δ ACD

and subtracting the area of Δ ADE from both sides.



∴ the area of Δ DEB = the area of Δ DEC

but they have the common base $\overline{DE}$ and on one side of it.

∴ $\overline{DE}$ // $\overline{BC}$ (Q.E.D.)

Answers of Test 3

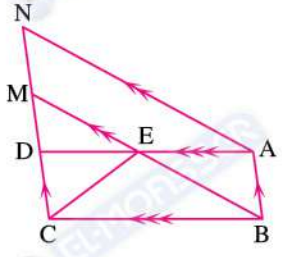
1 1 (a) 2 (c) 3 (a)

2 ∵ Δ EBC has the common base $\overline{BC}$ with the ▱ ABCD , E ∈ $\overline{AD}$

∴ The area of Δ EBC = $\frac{1}{2}$ the area of ▱ ABCD

, ∵ ▱ ABCD , ▱ ABMN have the common base $\overline{AB}$

and $\overleftrightarrow{AB}$ // $\overleftrightarrow{CN}$



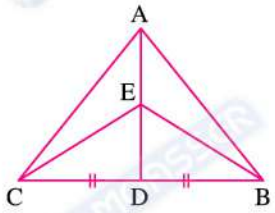
∴ The area of ▱ ABCD = the area of ▱ ABMN

∴ The area of Δ EBC = $\frac{1}{2}$ the area of ▱ ABMN (Q. E. D.)

Answers of Test 4

1 1 (d) 2 (c) 3 (c)

2 In Δ ABC :



∵ $\overline{AD}$ is a median

∴ area of Δ ABD = area of Δ ACD (1)

, in Δ BEC

∵ $\overline{ED}$ is a median

∴ Area of Δ EBD = area of Δ ECD (2)

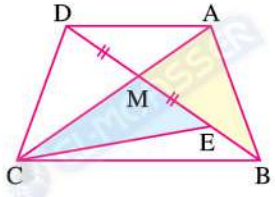
by subtracting (2) from (1)

∴ area of Δ ABE = area of Δ ACE (Q.E.D.)

Answers of Test 5

1 1 (b) 2 (b) 3 (c)

2 ∵ $\overline{MC}$ is a median in Δ DEC



∴ The area of Δ CME = the area of Δ CMD

, ∵ the area of Δ CME = the area of Δ AMB

∴ The area of Δ AMB = the area of Δ CMD

Adding the area of Δ AMD to both sides.

∴ The area of Δ ABD = the area of Δ ACD and they have the common base $\overline{AD}$ and on one side of it.

∴ $\overline{AD}$ // $\overline{BC}$ (Q.E.D.)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Q1: CHOOSE THE CORRECT ANSWER

1. If (X + 3) is one factor of the expression : $x^2 + x - 6$, then the other factor is .....

   (a) x + 3 (b) x – 4 (c) x + 1 (d) x – 2

2. If the expression : $x^2 + b\,x - 10$ can be factorized, then b may be equal to .....

   (a) 3 (b) 2 (c) 1 (d) – 1

3. For the expression: $x^2 - 2x - k$ can be factorized, then k ≠ .....

   (a) 8 (b) 3 (c) 6 (d) 15

4. $5x^2 - 7x - 6 = (5x + 3)(x - .....)$

   (a) 3 (b) 2 (c) – 3 (d) – 2

5. If $(2a - 5)(3a - 2) = 6a^2 + k\,a + 10$, then k = ...

   (a) 15 (b) 19 (c) – 19 (d) 4

6. If $x^2 - 2xy + y^2 = 25$, then X – y = ...

   (a) 25 (b) 5 (c) – 5 (d) ± 5

7. $(\sqrt{5} - 3)(\sqrt{5} + 3)$ = ...

   (a) 4 (b) 8 (c) – 4 (d) – 2

8. If $x - y = 5$, $x^2 + xy + y^2 = 7$, then $x^3 - y^3$ = ...

   (a) 2 (b) 7 (c) 12 (d) 35

9. If $a^2 + b^2 = 15$, $2ab = 10$, Then a + b = ...

   (a) 5 (b) – 5 (c) 25 (d) ± 5

10. If the expression $x^2 + ax + 64$ is a perfect square, then a = ...

    (a) 16 (b) ± 16 (c) 8 (d) ± 8

11. If $x^2 - y^2 = 12$, $x + y = 4$, then X – y = ...

    (a) 3 (b) 16

    (c) 8 (d) 2

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12 If $x^2 + 4x + k$ is a perfect square, then k = ...

(a) 1 (b) 2 (c) 3 (d) 4

13 If (x – 3) is a factor of the expression: $x^2 – 4x + 3$, then the other factor is .....

(a) (x + 1) (b) (x – 1) (c) (x + 3) (d) (x – 3)

14 If $(35)^2 – (15)^2 = 50x$, then x = ...

(a) 10 (b) 20 (c) 30 (d) 40

15 If $x^3 + 27 = (x + 3)(x^2 + k + 9)$, then k = ...

(a) – 6x (b) – 3x (c) 3x (d) 6x

16 If $x + y = 3$, $x^2 – xy + y^2 = 12$, then $X^3 – y^3$ = ...

(a) 4 (b) 36 (c) 9 (d) 24

17 If $x^3 + y^3 = 24$, $x + y = 6$, then $x^2 – xy + y^2$ = ...

(a) 4 (b) 12 (c) 18 (d) 30

18 If $x^2 – a = (x - 5)(x + 5)$, Then a = ...

(a) 5 (b) – 25 (c) 25 (d) 10

Q2: COMPLETE THE FOLLOWING

1 $x^3 – 8 = (.....)(x^2 + 2x + ...)$

2 If the expression: $x^2 + 4x + a$ is a perfect square, then a = ...

3 $4x^2 + 28x + ...$ (Complete to be perfect square)

4 ..... $– 18y^2 + 81$ (Complete to be perfect square)

5 If $a^2 – b^2 = a + b$, then a – b = ...

6 $8x^3 – ..... = (..... – .....)(..... + ... + 9)$

7 $x^2 + ... + 35 = (x + ...)(..... + 5)$

8 If $x^2 – 2xy – 3y^2 = 8$, $x + y = 4$, then $x – 3y$ = ...

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9 The quotient: $x^3 - 8$ by $x - 2$ is ..... (when $\neq 2$)

10 If (X – 5) is a factor of the expression : $x^2 - 10x + 25$, then the other factor is .....

11 If $5a^2 - 5b^2 = 100$, $a - b = 4$, Then $a + b$ = ...

12 If $x^2 - K = (x - 3)(x + 3)$, Then the value of K = ...

13 $a^2 - 6a +$ ..... (Complete to be perfect square)

Q3: ANSWER THE FOLLOWING

1 Factorize each of the following completely:

1 $x^2 + 13x - 30$ 2 $3x^3 - 81$ 3 $2x^2 + 7x + 3$

.....

4 $x^4 - 64y^4$ 5 $6m^2 - n + 2m - 3mn$ 6 $x^2 - 10x - 24$

.....

7 $a^3 + a^2 + a + 1$ 8 $2 - 2(x - 1)^3$ 9 $(a + b)^2 - 4$

.....

10 $(78)^2 - (77)^2$ 11 $x^3 + 8$ 12 $2x^2 - 32$

.....

2 If $xy = 8$, find the numerical value of the expression $(x + y)^2 - (x - y)^2$

.....

.....

3 If $(x + 1)$ is a factor of the expression: $5x^2 - 2x - 7$, then find the second factor

.....

.....

4 If $x + y = 6$, $x^2 - y^2 = 12$, $x^2 + xy + y^2 = 28$

Find the value of: $x^3 - y^3$

.....

.....

Q1: CHOOSE THE CORRECT ANSWER

1. The lengths of two adjacent sides of a parallelogram are 8 cm. and 5 cm. and the smaller height is 4 cm, then its area equals ..... cm^2.

   (a) 17 (b) 32 (c) 20 (d) 52

2. The area of a parallelogram is ..... the area of a triangle if they have a common base lying on one of two parallel straight lines including them.

   (a) half (b) equal to (c) twice (d) quarter

3. The ratio between the area of the parallelogram and the area of the triangle whose base iscommon and are included between two parallel straight lines equals .....

   (a) 1 : 2 (b) 1 : 3 (c) 2 : 1 (d) 2 : 3

4. If ABCD is a parallelogram whose area is 60 cm^2 , $E \in AD$, F is the midpoint of BC , Then the area of Δ EBF = ... cm^2

   (a) 60 (b) 30 (c) 20 (d) 120

5. The triangle whose base length is 12 cm. and its area is 48 cm^2, then the corresponding height is .....

   (a) 3 (b) 4 (c) 6 (d) 8

6. The median of the triangle divides its surface into two triangles .....

   (a) congruent. (b) equal in area (c) similar (d) equal in perimeter.

7. The sum of measures of the interior angles of a triangle equals .....

   (a) 120° (b) 60° (c) 180° (d) 360°

8. The parallelogram and ..... with common base and between two parallel straight lines are equal in area.

   (a) polygon (b) rectangle
   (c) triangle (d) trapezium

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9 If the area of a triangle is 24 cm^2, and its height is 8 cm. then its corresponding base length is ..... cm.

(a) 16 (b) 6 (c) 3 (d) 2

10 The two triangle which are equal in area, drawn on one base and on the same side of it, their vertices lie on a line ..... this base.

(a) parallel to (b) equal in area (c) intersecting (d) perpendicular to

11 A parallelogram whose area = 50 cm^2 and the length of its base equals twice the corresponding height, then this height equals ..... cm

(a) 50 (b) 25 (c) 10 (d) 5

12 A parallelogram whose area = 70 cm^2 and the length of one of its sides is 14 cm, then the length of the corresponding height equals ..... cm

(a) 7 (b) 5 (c) 8 (d) 6

Q2: COMPLETE THE FOLLOWING

1 The two triangles drawn on a common base and their vertices located on a straight line parallel to the base are .....

2 The number of axes of symmetry of an isosceles triangle equals .....

3 ABCD is a parallelogram of area 100 cm^2. $E \in AD$. Then area of Δ EBC = ... cm^2

4 The right-angled triangle whose side length are 3 cm, 4 cm, 5 cm, its area = ... cm^2.

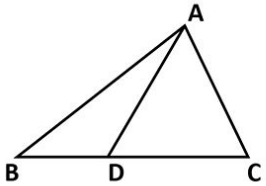
5 If two straight lines are intersecting, then each two vertically opposite angles are .....

6 Surfaces of two parallelograms with common base and between two parallel straight lines, one is carrying this base, are .....

7 In the opposite figure:

If the area of Δ ADB = $\frac{1}{2}$ the area of Δ ADC

Then BD = ... BC



8 The area of a triangle is equal to half of the area of a parallelogram if they havea common .....

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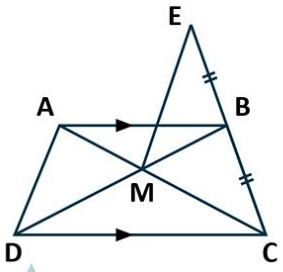
Q3: ANSWER THE FOLLOWING

1 In the opposite figure:
ABCD is a quadrilateral where
$\overline{AB}$ // $\overline{CD}$ and EB = BC, Prove that:
The area of Δ EBM = The area of Δ ADM



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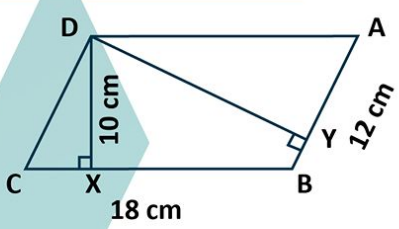
2 In the opposite figure:
ABCD is a parallelogram: AB = 12 cm.
BC = 18 cm, DX = 10 cm.
Find: (a) The area of parallelogram ABCD
(b) The lenght of $\overline{DY}$



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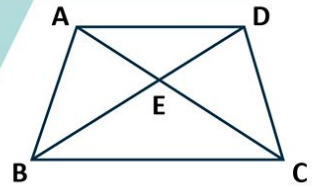
3 In the opposite figure:
The area of Δ AEB = the area of Δ DEC
Prove that : $\overline{AD}$ // $\overline{BC}$



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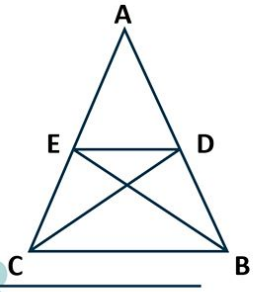
4 In the opposite figure:
The area of Δ ABE = the area of Δ ACD
Prove that : $\overline{DE}$ // $\overline{BC}$



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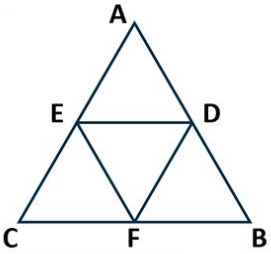
5 In the opposite figure:
DBFE and DFCE are two parallelograms and F ∈ $\overline{BC}$
Prove that :
The area of the figure ABFE = the area of the figure ADFC



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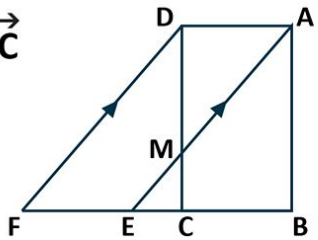
6 In the opposite figure:
ABCD is a rectangle, $\overline{AE}$ // $\overline{DF}$, E ∈ $\overrightarrow{BC}$ and F ∈ $\overrightarrow{BC}$
Prove that :
The area of the figure ABCM = the area of the figure DMEF



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Q1: CHOOSE THE CORRECT ANSWER

1 If (X + 3) is one factor of the expression : $x^2 + x - 6$, then the other factor is .....

(a) x + 3 (b) x – 4 (c) x + 1 **(d) x – 2**

2 If the expression : $x^2 + b\,x - 10$ can be factorized, then b may be equal to .....

(a) 3 **(b) 2** (c) 1 (d) – 1

3 For the expression: $x^2 - 2x - k$ can be factorized, then k ≠ .....

(a) 8 (b) 3 **(c) 6** (d) 15

4 $5x^2 - 7x - 6 = (5x + 3)(x - .....)$

(a) 3 **(b) 2** (c) – 3 (d) – 2

5 If $(2a - 5)(3a - 2) = 6a^2 + k\,a + 10$, then k = ...

(a) 15 (b) 19 **(c) – 19** (d) 4

6 If $x^2 - 2xy + y^2 = 25$, then X – y = ...

(a) 25 (b) 5 (c) – 5 **(d) ± 5**

7 $(\sqrt{5} - 3)(\sqrt{5} + 3)$ = ...

(a) 4 (b) 8 **(c) – 4** (d) – 2

8 If $x - y = 5$, $x^2 + xy + y^2 = 7$, then $x^3 - y^3$ = ...

(a) 2 (b) 7 (c) 12 **(d) 35**

9 If $a^2 + b^2 = 15$, $2ab = 10$, Then a + b = ...

(a) 5 (b) – 5 (c) 25 **(d) ± 5**

10 If the expression $x^2 + ax + 64$ is a perfect square, then a = ...

(a) 16 **(b) ± 16** (c) 8 (d) ± 8

11 If $x^2 - y^2 = 12$, $x + y = 4$, then X – y = ...

(a) 3 (b) 16

(c) 8 (d) 2

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12 If $x^2 + 4x + k$ is a perfect square, then k = ...

(a) 1 (b) 2 (c) 3 **(d) 4**

13 If (x – 3) is a factor of the expression: $x^2 - 4x + 3$, then the other factor is .....

(a) (x + 1) **(b) (x – 1)** (c) (x + 3) (d) (x – 3)

14 If $(35)^2 - (15)^2 = 50x$, then x = ...

(a) 10 **(b) 20** (c) 30 (d) 40

15 If $x^3 + 27 = (x + 3)(x^2 + k + 9)$, then k = ...

(a) – 6x **(b) – 3x** (c) 3x (d) 6x

16 If $x + y = 3$, $x^2 - xy + y^2 = 12$, then $X^3 - y^3$ = ...

(a) 4 **(b) 36** (c) 9 (d) 24

17 If $x^3 + y^3 = 24$, $x + y = 6$, then $x^2 - xy + y^2$ = ...

(a) 4 (b) 12 (c) 18 (d) 30

18 If $x^2 - a = (x - 5)(x + 5)$, Then a = ...

(a) 5 (b) – 25 **(c) 25** (d) 10

Q2: COMPLETE THE FOLLOWING

1 $x^3 - 8 = (x - 2)(x^2 + 2x + 4)$

2 If the expression: $x^2 + 4x + a$ is a perfect square, then a = 4

3 $4x^2 + 28x + 49$ (Complete to be perfect square)

4 $y^4 - 18y^2 + 81$ (Complete to be perfect square)

5 If $a^2 - b^2 = a + b$, then a – b = 1

6 $8x^3 - 27 = (2x - 3)(4x^2 + 6x + 9)$

7 $x^2 + 12x + 35 = (x + 7)(x + 5)$

8 If $x^2 - 2xy - 3y^2 = 8$, $x + y = 4$, then $x - 3y$ = 2

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9 The quotient: $x^3 - 8$ by $x - 2$ is ..... (when $\neq 2$)
$(x^2 + 2x + 4)$

10 If (X – 5) is a factor of the expression : $x^2 - 10x + 25$, then the other factor is .....
$(x - 5)$

11 If $5a^2 - 5b^2 = 100$, $a - b = 4$, Then $a + b$ = ...
5

12 If $x^2 - K = (x - 3)(x + 3)$, Then the value of K = ...
9

13 $a^2 - 6a +$ ..... (Complete to be perfect square)
9

Q3: ANSWER THE FOLLOWING

1 Factorize each of the following completely:

1 $x^2 + 13x - 30$
$(x + 15)(x - 2)$

2 $3x^3 - 81$
$3(x - 3)(x^2 + 3x + 9)$

3 $2x^2 + 7x + 3$
$(2x + 1)(x + 2)$

4 $x^4 - 64y^4$
$(x^2 + 8y^2)(x^2 + 8y^2)$

5 $6m^2 - n + 2m - 3mn$
$(2m - n)(3m + 1)$

6 $x^2 - 10x - 24$
$(x + 2)(x - 12)$

7 $a^3 + a^2 + a + 1$
$(a^2 + 1)(a + 1)$

8 $2 - 2(x - 1)^3$
$2(1 - (x - 1)^3)$
$2(x(x^2 - x + 1))$

9 $(a + b)^2 - 4$
$(a + b + 2)(a + b - 2)$

10 $(78)^2 - (77)^2$
$(78 - 77)(78 + 77)$
155

11 $x^3 + 8$
$(x + 2)(x^2 - 2x + 4)$

12 $2x^2 - 32$
$2(x - 4)(x + 4)$

2 If $xy = 8$, find the numerical value of the expression $(x + y)^2 - (x - y)^2$
32

3 If (x+ 1) is a factor of the expression: $5x^2 - 2x - 7$, then find the second factor
$5x - 7$

4 If $x + y = 6$, $x^2 - y^2 = 12$, $x^2 + xy + y^2 = 28$
Find the value of: $x^3 - y^3$
56

FOLLOW US

AHMED NASSR

Q1: CHOOSE THE CORRECT ANSWER

1. The lengths of two adjacent sides of a parallelogram are 8 cm. and 5 cm. and the smaller height is 4 cm, then its area equals ..... cm^2.

(a) 17 (b) 32 (c) 20 (d) 52

2. The area of a parallelogram is ..... the area of a triangle if they have a common base lying on one of two parallel straight lines including them.

(a) half (b) equal to (c) twice (d) quarter

3. The ratio between the area of the parallelogram and the area of the triangle whose base iscommon and are included between two parallel straight lines equals .....

(a) 1 : 2 (b) 1 : 3 (c) 2 : 1 (d) 2 : 3

4. If ABCD is a parallelogram whose area is 60 cm^2 , E $\in$ AD, F is the midpoint of BC , Then the area of Δ EBF = ... cm^2

(a) 60 (b) 30 (c) 20 (d) 120

5. The triangle whose base length is 12 cm. and its area is 48 cm^2, then the corresponding height is .....

(a) 3 (b) 4 (c) 6 (d) 8

6. The median of the triangle divides its surface into two triangles .....

(a) congruent. (b) equal in area (c) similar (d) equal in perimeter.

7. The sum of measures of the interior angles of a triangle equals .....

(a) 120° (b) 60° (c) 180° (d) 360°

8. The parallelogram and ..... with common base and between two parallel straight lines are equal in area.

(a) polygon (b) rectangle
(c) triangle (d) trapezium

9 If the area of a triangle is 24 cm^2, and its height is 8 cm. then its corresponding base length is ..... cm.

(a) 16 (b) 6 (c) 3 (d) 2

10 The two triangle which are equal in area, drawn on one base and on the same side of it, their vertices lie on a line ..... this base.

(a) parallel to (b) equal in area (c) intersecting (d) perpendicular to

11 A parallelogram whose area = 50 cm^2 and the length of its base equals twice the corresponding height, then this height equals ..... cm

(a) 50 (b) 25 (c) 10 (d) 5

12 A parallelogram whose area = 70 cm^2 and the length of one of its sides is 14 cm, then the length of the corresponding height equals ..... cm

(a) 7 (b) 5 (c) 8 (d) 6

Q2: COMPLETE THE FOLLOWING

1 The two triangles drawn on a common base and their vertices located on a straight line parallel to the base are ..... equal in area

2 The number of axes of symmetry of an isosceles triangle equals 1

3 ABCD is a parallelogram of area 100 cm^2. E ∈ AD. Then area of Δ EBC = ... 50 cm^2

4 The right-angled triangle whose side length are 3 cm, 4 cm, 5 cm, its area = ... 6 cm^2.

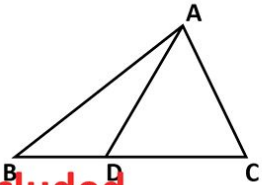
5 If two straight lines are intersecting, then each two vertically opposite angles are ..... equal in measure

6 Surfaces of two parallelograms with common base and between two parallel straight lines, one is carrying this base, are ..... equal in area

7 In the opposite figure:

If the area of Δ ADB = $\frac{1}{2}$ the area of Δ ADC

Then BD = ... $\frac{1}{3}$ ..... BC

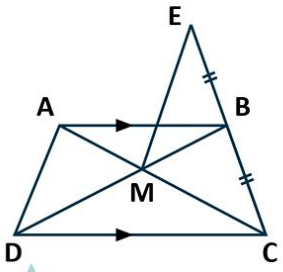


8 The area of a triangle is equal to half of the area of a parallelogram if they havea common ..... base and included between two parallel lines

AHMED NASSR

Q3: ANSWER THE FOLLOWING

1 In the opposite figure:
ABCD is a quadrilateral where
$\overline{AB}$ // $\overline{CD}$ and EB = BC, Prove that:
The area of Δ EBM = The area of Δ ADM



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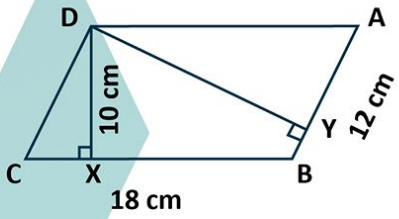
2 In the opposite figure:
ABCD is a parallelogram: AB = 12 cm.
BC = 18 cm, DX = 10 cm.
Find: (a) The area of parallelogram ABCD
(b) The lenght of $\overline{DY}$



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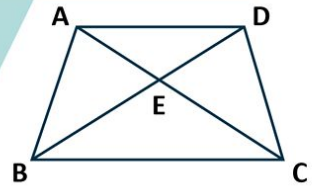
3 In the opposite figure:
The area of Δ AEB = the area of Δ DEC
Prove that : $\overline{AD}$ // $\overline{BC}$



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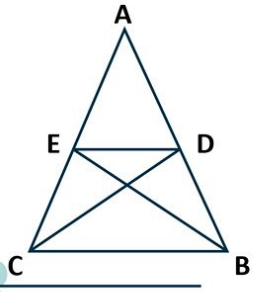
4 In the opposite figure:
The area of Δ ABE = the area of Δ ACD
Prove that : $\overline{DE}$ // $\overline{BC}$



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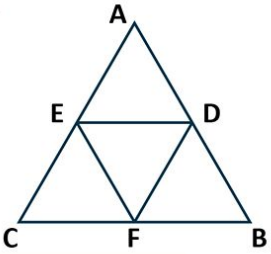
5 In the opposite figure:
DBFE and DFCE are two parallelograms and F ∈ $\overline{BC}$
Prove that :
The area of the figure ABFE = the area of the figure ADFC



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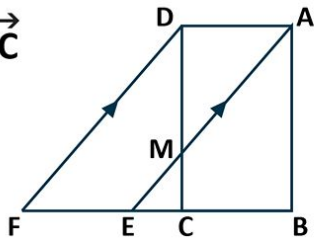
6 In the opposite figure:
ABCD is a rectangle, $\overline{AE}$ // $\overline{DF}$, E ∈ $\overrightarrow{BC}$ and F ∈ $\overrightarrow{BC}$
Prove that :
The area of the figure ABCM = the area of the figure DMEF



FOLLOW US

المراجعة رقم (4)

اختبار شهر فبراير

Question (1) Choose the correct answer.

1) $\frac{6}{\ldots\ldots\ldots} = 1$ (5 – 7 – 6 – 10)

2) Any number other 0 with indices 0 equals …….

(2 – 3 – 1 – 10)

3) The expression $X^2 + 7X + a$ can be factorized, Then a maybe equal …….

(8 – 10 – 18 – 49)

4) The expression $X^2 - 3X + a$ can be factorized, Then a maybe equal …….

(1 – 2 – 4 – 6)

5) The expression $X^2 - aX + 12$ can be factorized, Then a maybe equal …….

(-1 – 4 – 7 – 1)

6) The expression $X^2 - X - a$ can be factorized, Then a maybe equal …….

(8 – 12 – 30 – 6)

7) The expression $X^2 + aX + 25$ is a perfect square, Then a maybe equal …….

(5 – 10 – ±5 – ±10)

8) The expression $X^2 + 14X + a$ is a perfect square, Then a maybe equal …….

(2 – 7 – 14 – 49)

9) The expression $36X^2 + aX + 1$ is a perfect square, Then a maybe equal …….

(6 – 12 – ±6 – ±12)

10) If $a^2 + 2ab + b^2 = 25$, Then a + b = …….

(-5 – 5 – ±5 – ±12)

11) If $X^2 – a = (X – 3)(X + 3)$, Then a = …….

(3 – 6 – 9 – 0)

12) If $X^2 + M - 16 = (X - 4)(X + 4)$, Then M = …….

(3 – 6 – 9 – 0)

13) If $(50)^2 - (40)^2 = 10a$, Then a = ……..

(10 – 20 – 30 – 40)

14) If $a^2 - b^2 = 30$, $a - b = 5$, Then a + b = …….

(3 – 6 – 9 – 0)

15) If $X + Y = 4$ and $X^2 - XY + Y^2 = 9$, Then $X^3 + Y^3$ = …….

(18 – 27 – 36 – 40)

16) If $X^3 - Y^3 = 48$ and $X^2 + XY + Y^2 = 8$, Then X – Y = …….

(3 – 6 – 9 – 0)

17) If $X^3 - a^3 = (X - a)(X^2 + 3X + a^2)$, Then a = …….

(3 – 6 – 9 – 0)

Question (2) Complete the Following.

1) Any number divided by itself equals …….

2) ……. Is the additive identity.

3) $\frac{15}{\ldots\ldots} = 5$

4) 0 divided by any number equals ……

5) The number which has only 2 factors is …….

6) The number which has more than 2 factors is ……

7) The smallest odd prime number is ……

8) The only even prime number is …….

9) ……. Means ordering numbers from the greatest to the smallest.

10) ……. Means ordering numbers from the smallest to the greatest.

11) ……. is the multiplicative identity.

12) $X^2 - 11X + 18 = (X \ldots\ldots)(X \ldots\ldots)$

13) $X^2 + 5X + 6 = (X \ldots\ldots)(X \ldots\ldots)$

14) $X^2 - 8X + 12 = (X \ldots\ldots)(X \ldots\ldots)$

15) $X^2 + 5X + 6 = (X \ldots\ldots)(X \ldots\ldots)$

16) $5a^2 - 2a - 7 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

17) $3m^2 + 10mn + 8n^2 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

18) $3b^2 - 7b + 2 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

19) $5a^2 - 3ab - \ldots\ldots = (a - b)(\ldots\ldots + \ldots\ldots)$

20) $m^2 - 2m + 1 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

21) $a^2 - 9^2 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

22) $4c^4 - 12c^2d - 9d^2 = (\ldots\ldots\ldots\ldots)(\ldots\ldots\ldots\ldots)$

23) $(X + \ldots\ldots)(\ldots\ldots - 2Y) = 4X^2 - \ldots\ldots$

24) $(\ldots\ldots + 2C)(\ldots\ldots - 2C) = 25B^2 - \ldots\ldots$

25) $a + b = 5(a - b) = 10$, Then $a^2 - b^2 = \ldots\ldots$

26) If $3(X - Y)(X + Y) = 12$, Then $X^2 - Y^2 = \ldots\ldots$

27) If $m^2 - n^2 = 63$ and $m + n = 7$, Then $\sqrt{m - n} = \ldots\ldots$

28) $(99)^2 - (98)^2 = \ldots\ldots$

29) $a^3 - 1 = (a - 1)(\ldots\ldots\ldots\ldots)$

30) $m^{18} + m^{15} = \ldots\ldots (\ldots\ldots)(\ldots\ldots\ldots\ldots)$

31) If (a – b) is a factor of the expression of difference between two square then the other factor is …….

32) If (a – b) is a factor of the expression of difference between two cube then the other factor is …….

Question (3) Essay problems.

1) The area of rectangle is X^2+6X+8 cm^2, and its width is X+2, Find each of length and perimeter of the rectangle.

……

……

2) Factorize each of the following.

A) $X^4 + 9X^2 + 18$.

……

……

B) $5X^2 – 10X – 15$.

……

……

C) $X^2 (X – 23) + 60X$.

……

……

D) $(X – 4) (X – 9) – 2(X + 5)$.

……

……

E) $(X – 1)^2 – 2(X – 1) – 8$.

……

……

F) $6X^2 - 21X + 18$.

……

……

G) $12(c + d)X^2 + 68(c + d)X + 80(c + d)$.

……

……

H) $2X(X + 3) + 13X + 24$.

……

……

I) $5Y^2 - 4X(7Y + 3X)$.

……

……

3) The area of rectangle is X^2+6X+8 cm^2, and its width is X+2, Find each of length and perimeter of the rectangle.

……

……

4) Complete the missing term in each of the following trinomials to be a perfect square trinomial.

A) $4X^2$ …… + 1

B) Z^4 …… + $49L^4$

C) $4X^2 + 28X$ + …….

D) $a^2 - 6a$ + ……

E) …… - $18Y^2$ + 81

F) …… - $24ab + 16b^2$

5) Factorize each of the following.

A) $X^4 - 6X^2 + 26$.

.....

.....

B) $1 + 14X + 49X^2$.

.....

.....

C) $\frac{1}{16}a^2 + \frac{1}{10}a + \frac{1}{25}$.

.....

.....

D) $(X - y)^2 + 4XY$.

.....

.....

6) Use factorization to get value of each of the following.

A) $(87)^2 + 2\times13\times87 + (13)^2$.

.....

.....

B) $(7.3)^2 + 2\times7.3\times2.7 + (2.7)^2$.

.....

.....

C) $(99)^2 + 2\times99\times98 + (98)^2$.

.....

.....

D) 25 + 2×45 + 81.

.....

.....

7) If XY = 8, Find the numerical value of the expression $(X + Y)^2 – (X – Y)^2$.

.....

.....

5) Use factorization to get value of each of the following.

A) $(77)^2 - (23)^2$.

.....

.....

B) $(999)^2 - (1)^2$.

.....

.....

C) $(98)^2 - (2)^2$.

.....

.....

D) $(11.6)^2 - (1.6)^2$.

.....

.....

8) Use the idea of factorizing the difference between two square for each of the following.

A) 31 × 29.

.....

.....

B) 103×97.

.....

.....

9) Factorize each of the following.

A) $16X^3Y^2 - 686Y^5$.

.....

.....

B) $0.064a^3 - 0.027b^3$.

.....

.....

C) $(m+3)^3 - 27$.

.....

.....

D) $3 - 3(L+1)^3$.

.....

.....

10) If $a^2 - b^2 = 20$, $a - b = 2$ and $a^2 - ab + b^2 = 28$, Find the value of $a^3 - b^3$.

.....

.....

Question (1) Choose the correct answer.

1) The area of rectangle = ……..

(L × w – L + w – [L + w] × 2 – $\frac{1}{2}$ × [L × w])

2) The area of parallelogram = ……..

(b × h – b + h – [b + h] × 2 – $\frac{1}{2}$ × [b × h])

3) In parallelogram the smaller height corresponding to ……. Base.

(smaller – greater – equal – smaller or equal)

4) In parallelogram the greater height corresponding to ……. Base.

(smaller – greater – equal – greater or equal)

5) If the base length of the parallelogram is 10 cm and its corresponding height is 7 cm then its area = ……. cm^2 (17 – 35 – 70 – 34)

6) If the base length of the parallelogram is 12 cm and its corresponding height is 5 cm then its area = ……. cm^2 (17 – 30 – 60 – 34)

7) If the base lengths of the parallelogram is 10 cm and 8 cm and its greater height is 7 cm then its area = ……. cm^2 (70 – 56 – 28 – 35)

8) If the base lengths of the parallelogram is 10 cm and 8 cm and its smaller height is 7 cm then its area = ……. cm^2 (70 – 56 – 28 – 35)

9) If the base lengths of the parallelogram is 10 cm and 8 cm and its greater height is 5 cm then its smaller height = ……. cm (3 – 3.5 – 4 – 4.5)

10) If the base lengths of the parallelogram is 6 cm and 9 cm and its smaller height is 4 cm then its greater height = ……. cm (4 – 5 – 6 – 7)

11) A parallelogram with area 27 cm^2 and its base = 3 × its corresponding height then its base = ……. cm (3 – 6 – 9 – 12)

12) A parallelogram with area 32 cm^2 and its base = 2 × its corresponding height then its base = ……. cm (4 – 6 – 8 – 12)

13) Surface of parallelogram ..... Another surface of parallelogram have a common base and between two parallel lines. (< – > – = – ≥)

14) Surface of parallelogram ..... Another surface of triangle have a common base and between two parallel lines. (< – > – = – ≥)

15) The area of triangle = ...

(b × h – b + h – [b + h] × 2 – $\frac{1}{2}$ × [b × h])

16) If the base length of the triangle is 10 cm and its corresponding height is 7 cm then its area = ... cm^2 (17 – 35 – 70 – 34)

17) If the base length of the triangle is 5 cm and its corresponding height is 8 cm then its area = ... cm^2 (40 – 30 – 20 – 10)

18) A triangle with area 27 cm^2 and its base = 6 cm then its height = ... cm

(3 – 6 – 9 – 12)

19) A triangle with area 24 cm^2 and its height = 8 cm then its base = ... cm

(3 – 6 – 9 – 12)

20) A triangle with area 6 cm^2 and its base = 3 × its corresponding height then its base = ... cm (3 – 6 – 9 – 12)

21) A triangle with area 16 cm^2 and its base = 2 × its corresponding height then its height = ... cm (2 – 4 – 6 – 8)

22) The point of intersection of the heights in the acute angled triangle is ..... the triangle (Inside – outside – at the right angle)

23) The point of intersection of the heights in the obtuse angled triangle is ..... the triangle (Inside – outside – at the right angle)

24) The point of intersection of the heights in the right angled triangle is ..... the triangle (Inside – outside – at the right angle)

25) The point of intersection of the heights in the equilateral triangle is ..... the triangle. (Inside – outside – at the right angle)

26) If ABC is a triangle and AD is a median, Then area of triangle ABC = ... area of triangle ABD. (0 – 1 – 2 – 3)

27) If ABC is a triangle and AD is a median, Then area triangle of ACD = ... area triangle of ABD. (0 – 1 – 2 – 3)

28) If ABC is a triangle and AD is a median, Then area triangle of ACD = ... area triangle of ABC. (0 – $\frac{1}{2}$ – $\frac{1}{3}$ – $\frac{1}{4}$)

Question (2) Complete the Following.

1) Surfaces of 2 parallelogram with common base and between two parallel straight line are .....

2) Surfaces of 2 parallelogram and rectangle with common base and between two parallel straight line are .....

3) The area of rectangle = ...

4) The area of parallelogram = ...

5) Surfaces of 2 parallelogram with base equal in length and lying on a straight line and opposite side to it lying on another parallel straight line are.....

6) If the base length of the parallelogram is 5 cm and its corresponding height is 6 cm then its area = ... cm^2

7) If the base length of the parallelogram is 12 cm and its corresponding height is 11 cm then its area = ... cm^2

8) If the base length of the parallelogram is 15 cm and its corresponding height is 5 cm then its area = ... cm^2

9) If the base lengths of the parallelogram is 5 cm and 7 cm and its greater height is 7 cm then its area = ... cm^2

10) If the base lengths of the parallelogram is 8 cm and 11 cm and its greater height is 9 cm then its area = ... cm^2

11) If the base lengths of the parallelogram is 10 cm and 8 cm and its smaller height is 5 cm then its area = ... cm^2

12) If the base lengths of the parallelogram is 5 cm and 7 cm and its smaller height is 5 cm then its greater height = ... cm

13) A parallelogram with area 48 cm^2 and its base = 3 × its corresponding height then its base = ... cm

14) A parallelogram with area 64 cm^2 and its base = 4 × its corresponding height then its base = ... cm

15) The area of triangle = ...

16) If the base length of the triangle is 7 cm and its corresponding height is 8 cm then its area = ... cm^2

17) If the base length of the triangle is 6 cm and its corresponding height is 7 cm then its area = ... cm^2

18) A triangle with area 84 cm^2 and its base = 12 cm then its height = ...cm

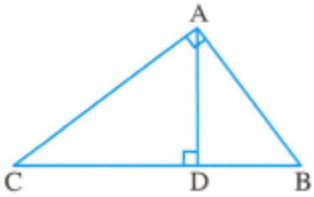
19) The ratio between the area of triangle and the area of parallelogram which have common base and between two parallel straight lines is .....

20) The ratio between the area of parallelogram and the area of parallelogram which have common base and between two parallel straight lines is .....

21) The area of right angled triangle which the lengths of the two sides of the right angle are 5 cm and 4 cm is .....

22) The length of two adjacent sides of the parallelogram is 10 cm and 8 cm and its greater height is 6 cm then its area = ...

23) ABC is a right angled triangle and AD is perpendicular to BC, Then ..... × ..... = ... × .....



24) If the base length of 2 triangle are equal and their corresponding heights length are equal, Then their areas are ……

25) Two triangle which have a common base and their vertices on a straight line parallel to the base are …….

26) Triangles of bases equal in length and lying between two parallel lines are ……

27) The median of triangle divides its surface into two triangles are ……

28) Triangles which have congruent bases and have a common vertex are ……

29) If ABC is a triangle and D is the midpoint of BC, Then area of triangle ABD = area of triangle ……., and = $\frac{1}{2}$ area of triangle …….

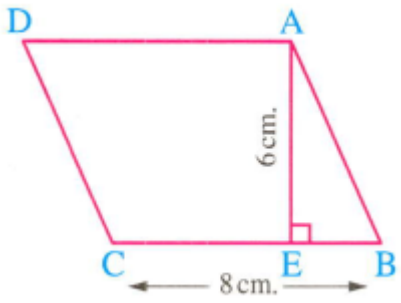
30) If XYZ is a triangle and M is the midpoint of YZ and the area of XYM = 30 cm^2

Then the area of triangle XYZ = ……., and the area of XZM = …….

Question (3) Essay problems.

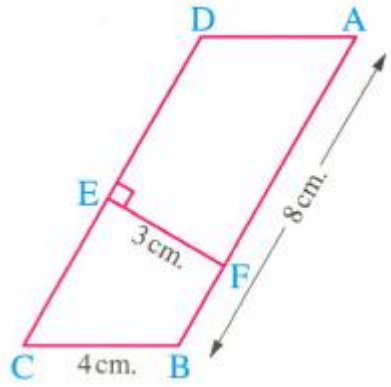
1) In each of the following find the area of ABCD.

A)



Area of ABCD = …….

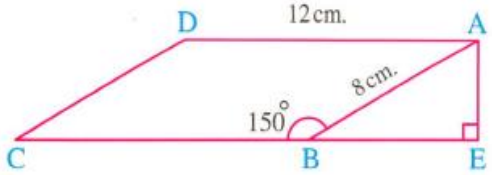
B)



Area of ABCD = …….

2) ABCD is a parallelogram in which m (∠ ABC) = 150° ,
AD = 12 cm. , AB = 8 cm.
, E ∈ $\overrightarrow{CB}$ and $\overline{AE} \perp \overrightarrow{CB}$

Find : The area of ▱ ABCD



« 48 cm^2 »

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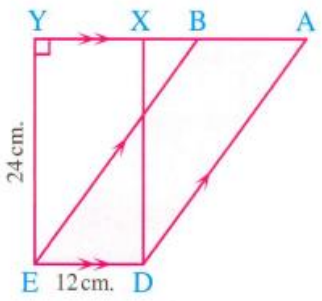
3) 🕮 **In the opposite figure :**
$\overleftrightarrow{AB}$ // $\overleftrightarrow{DE}$, X ∈ $\overrightarrow{AB}$, Y ∈ $\overrightarrow{AB}$
, XDEY is a rectangle and $\overline{AD}$ // $\overline{BE}$

1 Find the area of the figure ABED

2 If AD = 30 cm. , find the length of the perpendicular from B to $\overline{AD}$



« 288 cm^2 , 9.6 cm. »

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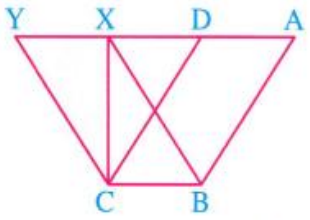
.....

4) In the opposite figure :

ABCD and XBCY are two parallelograms , $X \in \overrightarrow{AD}$

and the area of Δ XCY = 15 cm^2

Find : The area of $\square$ ABCD



« 30 cm^2 »

.....

.....

.....

.....

.....

.....

.....

.....

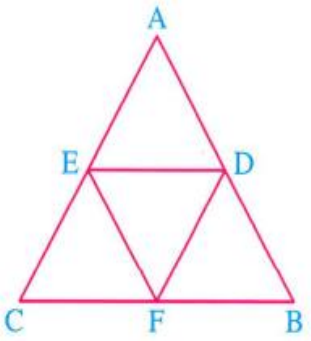
5) In the opposite figure :

DBFE and DFCE are two parallelograms

and $F \in \overline{BC}$

Prove that :

The area of the figure ABFE = the area of the figure ADFC



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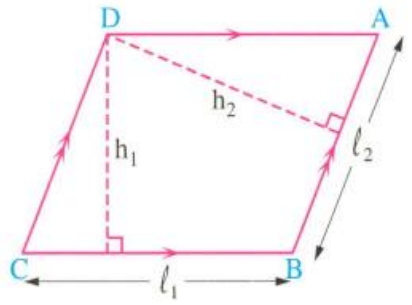
6) **In the opposite figure :**

ABCD is a parallelogram whose area is 240 cm^2

$\ell_1 : h_1 = 5 : 3$, $\ell_1 : \ell_2 = 4 : 3$ **Find :** h_2



« 16 cm. »

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7)

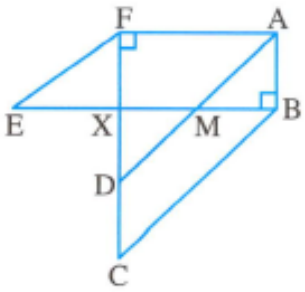
In the opposite figure :

ABXF is a rectangle

, ABCD and AMEF are two parallelograms

Prove that :

The area of ▱ ABCD = The area of ▱ AMEF



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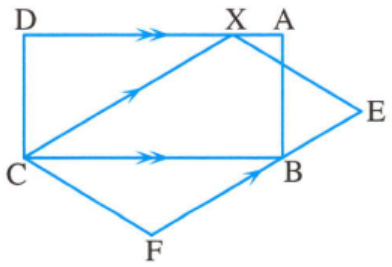
8)

In the opposite figure :

ABCD is a rectangle

, XEFC is a parallelogram.



Prove that :

The area of the rectangle ABCD = The area of the parallelogram XEFC

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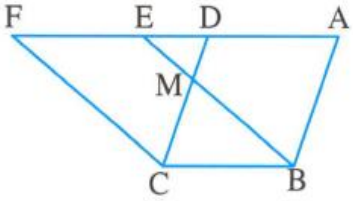
9)

In the opposite figure :

ABCD and EBCF are two parallelograms

, $D \in \overline{AF}$, $E \in \overline{AF}$

, $\overline{CD} \cap \overline{BE} = \{M\}$



Prove that : The area of the figure ABMD = The area of the figure EMCF

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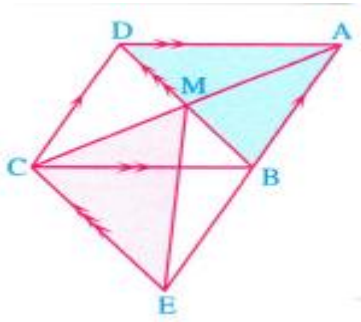
10)

In the opposite figure :

ABCD and BECD are two parallelograms , where $\overline{AC} \cap \overline{BD} = \{M\}$

Prove that :

The area of Δ ABD = the area of Δ MEC



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11)

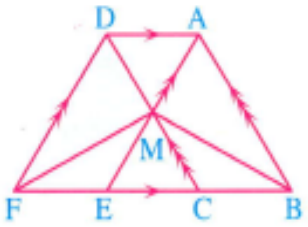
In the opposite figure :

ABCD and AEFD are two parallelograms and $\overline{AE} \cap \overline{CD} = \{M\}$

where $E \in \overline{BF}$ and $C \in \overline{BF}$

Prove that :

The area of Δ ABM = the area of Δ DMF



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12)

In the opposite figure :

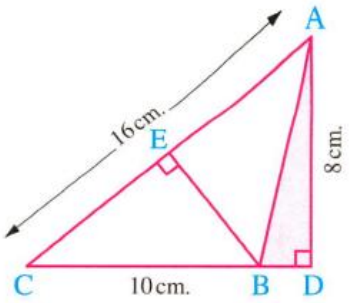
$\overline{AD} \perp \overrightarrow{CB}$, $\overline{BE} \perp \overline{AC}$, AC = 16 cm. ,

BC = 10 cm. and AD = 8 cm.

Find :

1 The area of Δ ABC

2 The length of $\overline{BE}$



« 40 cm^2 , 5 cm. »

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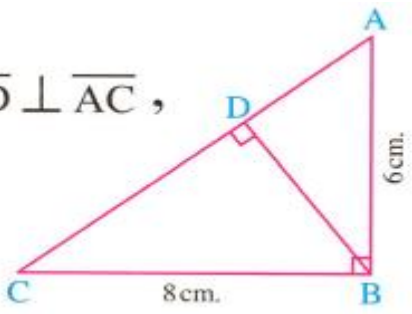
13)

In the opposite figure :

Δ ABC is right-angled at B , D ∈ $\overline{AC}$ such that : $\overline{BD} \perp \overline{AC}$,

if AB = 6 cm. and BC = 8 cm.

Find : The length of $\overline{BD}$



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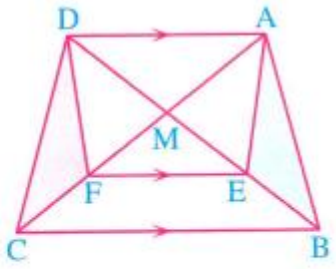
14) ***In the opposite figure :***



ABCD is a quadrilateral.

Its diagonals intersect at M

, $\overline{AD}$ // $\overline{EF}$ // $\overline{BC}$

Prove that :

The area of Δ ABE = the area of Δ DFC

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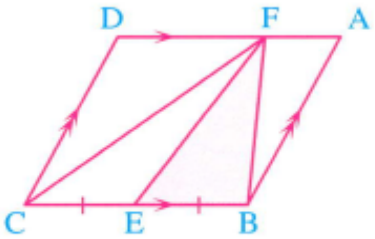
15)

In the opposite figure :



ABCD is a parallelogram , $F \in \overline{AD}$

and E is the midpoint of $\overline{BC}$

Prove that :

The area of Δ BEF = $\frac{1}{4}$ the area of ▱ ABCD

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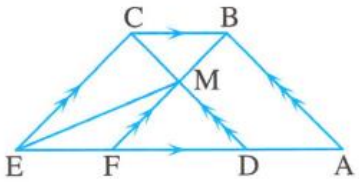
16)

In the opposite figure :

ABCD and BCEF are two parallelograms.



Prove that :

The area of Δ CEM = $\frac{1}{2}$ The area of the parallelogram ABCD

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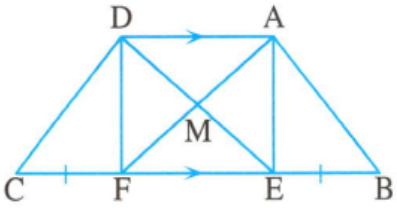
17)

In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $E \in \overline{BC}$, $F \in \overline{BC}$

where BE = CF , $\overline{AF} \cap \overline{ED} = \{M\}$



Prove that :

1 The area of Δ AME = The area of Δ DMF

2 The area of the figure ABEM = The area of the figure DCFM

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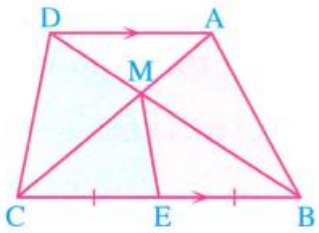
18)

In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $\overline{AC} \cap \overline{BD} = \{M\}$,

E is the midpoint of $\overline{BC}$



Prove that : The area of the figure ABEM = the area of the figure DMEC

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19)

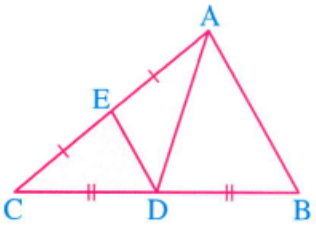
In the opposite figure :

D is the midpoint of $\overline{BC}$,

E is the midpoint of $\overline{AC}$,

the area of Δ DEC = 5 cm^2

Calculate : The area of Δ ABC



« 20 cm^2 »

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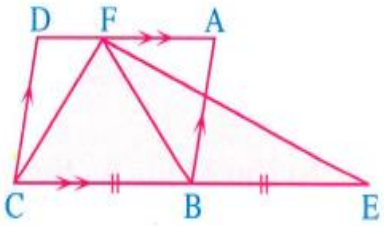
20)

In the opposite figure :

ABCD is a parallelogram. E $\in \overrightarrow{CB}$, where BC = BE

Prove that : The area of Δ FEC = the area of ▱ ABCD



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المراجعة رقم (5)

اختبار شهر فبراير

Complete

Algebra

1 If $(x + 1)$ is a factor of the expression : $2x^2 - x - 3$, then the other factor is .....

2 If $(x + 2)(x + 3) = x^2 + a x + 6$, then a = ...

3 If $(x - 5)$ is a factor of the expression : $x^2 - 10x + 25$, then the other factor is .....

4 If $(x + 3)$ is a factor of the expression : $x^2 + 7x + 12$, then the other factor is .....

5 If $a^2 + k + 6 = (a - 3)(a - 2)$, then k = ...

6 If $(x + y)^2 = 36$, $x^2 + y^2 = 26$, then xy = ...

7 If $(2x - 1)$ is a factor of the expression : $2x^2 + 9x - 5$, then the other factor is .....

8 $2x^2 + x - 6 = (..... - .....)(x + ...)$

9 $5x^2 - 2x - 7 = (5x - .....)(x + ...)$

10 $3x^2 + 7x - 6 = (3x - .....)(..... + 3)$

11 If the expression : $x^2 + 6x - k$ is a perfect square , then k = ...

12 If $kx^2 - 10x + 1$ is a perfect square , then k = ...

13 If the expression : $9x^2 + kx + 25$ is a perfect square , then k = ...

14 If the trinomial : $x^2 + kx + 36$ is a perfect square , then k = ...

15 If $a + b = 5$, $a - b = 3$, then $a^2 - b^2$ = ...

16 If $x^2 - y^2 = 24$, $x - y = 3$, then $x + y$ = ...

17 $x^3 - 8 = (x - 2)(..... + ... + 4)$

18 $(2x - 3y)(4x^2 + 6xy + 9y^2)$ = ...

19 If $x^3 + c = (x + 2)(x^2 - 2x + 4)$, then c = ...

20 If $(4a^2 - 2a + 1)$ is one factor of the expression : $8a^3 + 1$, then the other factor is .....

21 $(a + b)x + (a + b)y = (a + ...)(..... + ...)$

22 If $a + b = 5$, $x - y = 3$
, then the numerical value of the expression : $a(x - y) + b(x - y)$ = ...

Choose:

1 The expression : $x^2 - x - a$ can be factorized if a = ...

(a) 3 (b) 4 (c) 5 (d) 6

---

2 If $x^2 + a\,x - 13 = (x + 1)(x - 13)$, then a = ...

(a) zero . (b) 25 (c) – 12 (d) 12

---

3 If the expression : $x^2 - c\,x + 12$ can be factorized , then c = ...

(a) – 1 (b) 4 (c) 7 (d) 1

---

4 Which of the following numbers can be added to the expression : $x^2 - 8\,x + 5$ to be factorized ?

(a) 1 (b) 2 (c) 4 (d) 5

---

5 The expression : $x^2 + 5\,x + m$ can be factorized , if m = ...

(a) 12 (b) 7 (c) – 14 (d) – 2

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6 The expression : $x^2 + 5\,x + m$ can be factorized , if m = ...

(a) 5 (b) 1 (c) 6 (d) 7

---

7 The expression : $x^2 + 7\,x + b$ can be factorized , if b = ...

(a) 3 (b) 4 (c) 6 (d) 7

---

8 If $(x + 3)$ is one factor of the expression : $x^2 + x - 6$, then the other factor is .....

(a) $x - 2$ (b) $x - 3$ (c) $x + 2$ (d) $x + 6$

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9 If the expression : $x^2 + a\,x - 12$ can be factorized , then a may be equal to .....

(a) 12 (b) – 8 (c) 8 (d) – 1

---

10 The number can be added to the expression : $2\,x^2 + 5\,x - 10$ to be factorized is .....

(a) – 1 (b) – 2 (c) – 3 (d) – 4

---

11 $5\,x^2 - 7\,x - 6 = (5\,x + 3)(x - .....)$

(a) 3 (b) 2 (c) – 3 (d) – 2

12 If $(2a-5)(3a-2) = 6a^2 + ka + 10$, then k = ...

(a) 15 (b) 19 (c) – 19 (d) 4

---

13 $2x^2 + 5x + 3 = (..... + 3)(x + 1)$

(a) x (b) $2x$ (c) $3x$ (d) $5x$

---

14 If $x^2 + kx + 25$ is a perfect square , then k = ...

(a) 5 (b) 10 (c) ± 10 (d) ± 5

---

15 If $x^2 - kx + 25$ is a perfect square , then k = ...

(a) 2 (b) 10 (c) 5 (d) 50

---

16 If $kx^2 + 12x + 9$ is a perfect square , then k = ...

(a) 3 (b) 4 (c) 9 (d) 16

---

17 $(x + 3y)^2 = x^2 + ... + 9y^2$

(a) $6xy$ (b) $9xy$ (c) $3xy$ (d) 6

---

18 If $y^2 + 12y + m$ is a perfect square , then m = ...

(a) 25 (b) 36 (c) – 36 (d) 100

---

19 If the expression : $x^2 - 6x - m$ is a perfect square , then m = ...

(a) – 9 (b) 1 (c) 2 (d) 9

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20 The missing term in the expression : $9x^2 + ... + 16y^2$ to be a perfect square is .....

(a) $12xy$ (b) $24x$ (c) $24xy$ (d) $12x^2y^2$

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21 If $x^2 - a = (x-3)(x+3)$, then a = ...

(a) 3 (b) – 3 (c) 9 (d) – 9

---

22 If $x - y = 3$, $x + y = 6$, then $x^2 - y^2$ = ...

(a) 12 (b) 9 (c) 3 (d) 18

---

23 If $x^2 - y^2 = 16$, $x - y = 2$, then $x + y$ = ...

(a) 4 (b) 8 (c) – 8 (d) 2

24 If $x+y=3$, $x^2-xy+y^2=5$, then $x^3+y^3=$ .....

(a) 15 (b) 25 (c) 8 (d) 7

---

25 If $a^3-b^3=64$, $a^2+ab+b^2=16$, then $a-b=$ .....

(a) 8 (b) -4 (c) 4

---

26 $(x+1)(x^2-x+1)=$ .....

(a) x^3-1 (b) x^3+1 (c) $(x-1)^3$ (d) $(x+1)^3$

---

27 $(75)^2-(25)^2=100\times$ .....

(a) 75 (b) 50 (c) 100 (d) 25

---

28 If $x^3+y^3=28$, $x+y=2$, then $x^2-xy+y^2=$ .....

(a) 48 (b) 14 (c) 2 (d) 7

Word Problems:

1 Factorize each of the following completely :

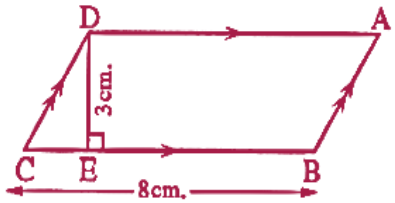
1. $ax+bx+5a+5b$
2. $x^2+8x+15$
3. $x^2-8x+12$
4. $x^2+13x-30$
5. $x^2-3x-18$
6. $(c+d)^2+5(c+d)+6$
7. $3x^2+7x+2$
8. $2x^2+x-6$
9. $2x^2-3x+1$
10. $2x^2-5x-12$
11. x^2-9
12. $16x^2-9$
13. $8x^3+125$
14. $3x^3-81$
15. $a^3+0.008$

1 If ABCD is a parallelogram in which AB = 5 cm. and BC = 10 cm. and its smaller height is 4 cm. , then its greater height is .....

2 **In the opposite figure :**

ABCD is a parallelogram

of area ..... cm^2.



3 Surfaces of two parallelograms with common base and between two parallel straight lines, one is carrying this base, are .....

4 The area of a parallelogram is 48 cm^2 and its base length is 12 cm. , then the corresponding height to this base is ..... cm.

5 The area of a triangle is equal to half of the area of a parallelogram if they have a common ..... and lying on .....

6 A triangle has a base of length 8 cm. and its corresponding height is 5 cm. , its area is ..... cm^2

7 A triangle is of area 15 cm^2 and one of its heights is 3 cm. , then the length of its corresponding base is ..... cm.

8 If ABCD is a parallelogram its area is 100 cm^2 , then the area of Δ ABC = ... cm^2

Choose:

1 If the base length of a parallelogram is 7 cm. and the corresponding height is 4 cm. , then its area equals .....

(a) 11 cm^2 (b) 14 cm^2 (c) 22 cm^2 (d) 28 cm^2

---

2 If the area of a parallelogram is 35 cm^2 and the length of one of its sides is 7 cm. , then the corresponding height to this side is ..... cm.

(a) 10 (b) 5 (c) 7 (d) $\frac{5}{2}$

---

3 The area of the parallelogram in which the lengths of two adjacent sides are 5 cm. and 7 cm. and its smaller height is 4 cm. equals ..... cm^2

(a) 120 (b) 28 (c) 35 (d) 20

---

4 If the lengths of two adjacent sides of a parallelogram are 6 cm. and 7 cm. and its greater height is 5 cm. , then its area equals ..... cm^2

(a) 30 (b) 35 (c) 42 (d) 49

---

5 If the lengths of two adjacent sides of a parallelogram are 9 cm. and 6 cm. and its smaller height is 4 cm. , then its greater height is ..... cm.

(a) 36 (b) 24 (c) 12 (d) 6

---

6 The area of a triangle is ..... the area of a parallelogram if they have a common base lying on one of two parallel straight lines including them.

(a) equal to (b) half (c) twice (d) quarter

---

7 The ratio between the area of the parallelogram and the area of the triangle whose base is common and are included between two parallel straight lines equals .....

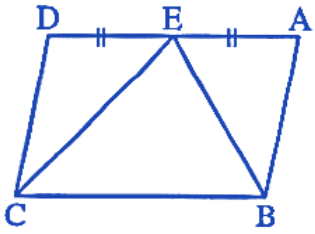
(a) 1 : 2 (b) 1 : 3 (c) 2 : 1 (d) 2 : 3

---

8 If ABCD is a parallelogram , $E \in \overline{AD}$, the area of Δ EBC = 35 cm^2 , then the area of $\square$ ABCD = ... cm^2

(a) 35 (b) 70 (c) 17 (d) 17.5

9 **In the opposite figure :**



If ABCD is a parallelogram ,

its area = 24 cm^2

, then the area of Δ ABE = ... cm^2

(a) 24 (b) 12 (c) 8 (d) 6

---

10 The triangle whose base length is 12 cm. and its area is 48 cm^2 , then the corresponding height is .....

(a) 3 cm. (b) 4 cm. (c) 6 cm. (d) 8 cm.

---

11 If the area of a triangle is 24 cm^2 and its height is 8 cm. , then the length of the corresponding base is ..... cm.

(a) 16 (b) 6 (c) 3 (d) 2

---

12 The area of the rectangle whose dimensions are 6 cm. and 4 cm. ..... the area of the triangle whose base length is 12 cm. and its corresponding height is 4 cm.

(a) < (b) > (c) = (d) ≠

Word Problems:

1 Find the area of the parallelogram in which the lengths of two adjacent sides are 6 cm. and 8 cm. and its greater height is 5 cm.

---

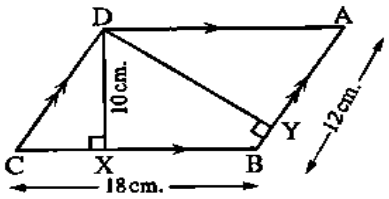
2 **In the opposite figure :**

ABCD is a parallelogram , AB = 12 cm.

, BC = 18 cm. , DX = 10 cm.

Find : [1] The area of ▱ ABCD

[2] The length of $\overline{DY}$



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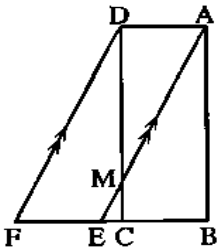
3 **In the opposite figure :**

ABCD is a rectangle , $\overline{AE}$ // $\overline{DF}$

, E ∈ $\overrightarrow{BC}$, F ∈ $\overrightarrow{BC}$

Prove that :

The area of the figure ABCM = the area of the figure DMEF



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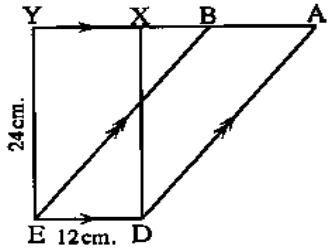
4 **In the opposite figure :**

$\overleftrightarrow{AB}$ // $\overleftrightarrow{DE}$, X ∈ $\overrightarrow{AB}$, Y ∈ $\overrightarrow{AB}$

, XDEY is a rectangle , $\overline{AD}$ // $\overline{BE}$

, DE = 12 cm. , YE = 24 cm.

Find : The area of the figure ABED



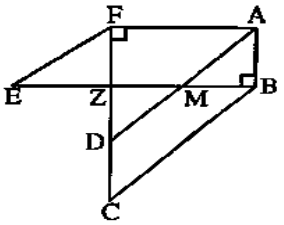
5 **In the opposite figure :**

ABZF is a rectangle

, ABCD , AMEF are two parallelograms

Prove that :

The area of ▱ ABCD = the area of ▱ AMEF



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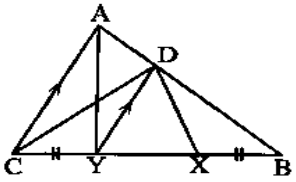
6 **In the opposite figure :**

$\overline{DY}$ // $\overline{AC}$, BX = YC

Prove that :

The area of Δ BDX = the area of Δ AYD



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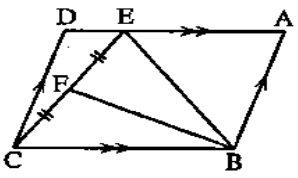
7 **In the opposite figure :**

ABCD is a parallelogram whose area is 40 cm^2

, F is the midpoint of $\overline{EC}$, E ∈ $\overline{AD}$

Find : The area of Δ BEF

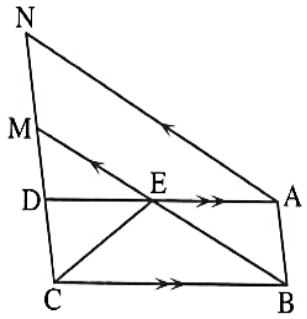


8 **In the opposite figure :**

ABCD , ABMN are two parallelograms

Prove that :

The area of Δ EBC = $\frac{1}{2}$ the area of $\square$ ABMN



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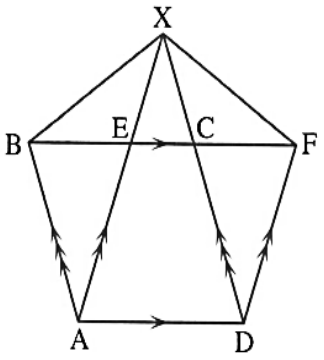
9 **In the opposite figure :**

ABCD , AEFD are two parallelograms

, $\overrightarrow{AE} \cap \overrightarrow{DC} = \{X\}$

Prove that :

The area of Δ ABX = the area of Δ DFX



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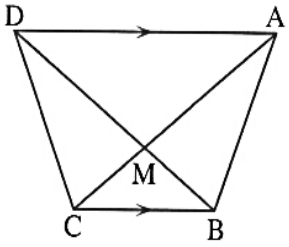
10 **In the opposite figure :**

$\overline{AD}$ // $\overline{BC}$

Prove that :

The area of Δ AMB = the area of Δ DMC



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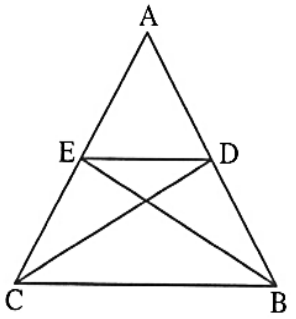
11 **In the opposite figure :**

ABC is a triangle , D $\in \overline{AB}$

, E $\in \overline{AC}$

, Such that the area of Δ ABE = the area of Δ ACD

Prove that : $\overline{DE}$ // $\overline{BC}$



The Answers

Complete

1 $(2x-3)$ 2 5 3 $(x-5)$ 4 $(x+4)$

5 $-5a$ 6 5 7 $(x+5)$ 8 $2x, 3, 2$

9 $7, 1$ 10 $2, x$ 11 -9 12 25

13 ± 30 14 ± 12 15 15 16 8

17 $x^2, 2x$ 18 $8x^3 - 27y^3$

19 8 20 $2a+1$ 21 b, x, y

22 15

Choose

1 (d) 2 c 3 (c) 4 (b) 5 (c)

6 (c) 7 (c) 8 (a) 9 (d) 10 (b)

11 (b) 12 (c) 13 (b) 14 (c) 15 (b)

16 (b) 17 (a) 18 (b) 19 (a) 20 (c)

21 (c) 22 (d) 23 (b) 24 (a) 25 (c)

26 (b) 27 (b) 28 (b)

Word Problems

1 $a(x+5) + b(x+5) = (x+5)(a+b)$

2 $(x+3)(x+5)$

3 $(x-2)(x-6)$

4 $(x-2)(x+15)$

5 $(x+3)(x-6)$

6 $((c+d)+2)((c+d)+3)$

7 $(3x+1)(x+2)$

8 $(2x-3)(x+2)$

9 $(2x-1)(x-1)$

10 $(2x+3)(x-4)$

11 $(x-3)(x+3)$

12 $(4x-3)(4x+3)$

13 $(2x+5)(4x^2-10x+25)$

14 $3(x-3)(x^2+3x+9)$

15 $(a+0.2)(a^2-0.2a+0.04)$

The Answers

Complete

1 8 cm. 2 24 3 equal in area

4 4

5 base , one of two parallel straight lines including them.

6 20 7 10 8 50

Choose

1 (d) 2 (b) 3 (b) 4 (a) 5 (d)

6 (b) 7 (c) 8 (b) 9 (d) 10 (d)

11 (b) 12 (c)

Word Problems

1

The area of the parallelogram = $6 \times 5 = 30$ cm^2

2

1 The area of $\square$ ABCD = BC × DX = 18×10
= 180 cm^2

2 DY = $\frac{\text{the area}}{AB} = \frac{180}{12} = 15$ cm.

3

$\because$ ABCD is a rectangle $\therefore \overline{AD} // \overline{BC}$

$\therefore \overline{AD} // \overline{EF}$

, $\because \overline{AE} // \overline{DF}$

$\therefore$ AEFD is a parallelogram

, $\because$ the rectangle ABCD , $\square$ AEFD have the common base $\overline{AD}$, $\overline{AD} // \overline{BF}$

$\therefore$ The area of the rectangle ABCD
= the area of $\square$ AEFD

Subtracting the area of Δ AMD from both sides

$\therefore$ The area of the figure ABCM
= the area of the figure DMEF (Q.E.D.)

4

$\because \overleftrightarrow{AB} // \overleftrightarrow{DE}$

, $\overline{AD} // \overline{BE}$ $\therefore$ ABED is a parallelogram

, $\because$ the rectangle XYED , $\square$ ABED have the common base $\overline{DE}$, $\overleftrightarrow{AB} // \overleftrightarrow{DE}$

$\therefore$ The area of $\square$ ABED
= The area of the rectangle XYED

, $\because$ the area of the rectangle XYED = 12×24
= 288 cm^2

$\therefore$ The area of $\square$ ABED = 288 cm^2 (The req.)

5

$\because \square$ ABCD , $\square$ ABZF have the common base $\overline{AB}$

, $\overline{AB} // \overline{CF}$

$\therefore$ The area of $\square$ ABCD = The area of $\square$ ABZF (1)

, $\because \square$ AMEF , $\square$ ABZF have the common base $\overline{AF}$

, $\overline{AF} // \overline{BE}$

$\therefore$ The area of $\square$ AMEF = The area of $\square$ ABZF (2)

From (1) and (2) :

$\therefore$ The area of $\square$ ABCD = The area of $\square$ AMEF
(Q.E.D.)

6

$\because \Delta\Delta$ BDX , DCY have equal bases in length and on one straight line and they have the same vertex D

$\therefore$ The area of Δ BDX = The area of Δ DCY (1)

, $\because \Delta\Delta$ DCY , AYD have the common base $\overline{DY}$

, $\overline{DY} // \overline{AC}$

$\therefore$ The area of Δ DCY = The area of Δ AYD (2)

From (1) and (2) :

$\therefore$ The area of Δ BDX = The area of Δ AYD (Q.E.D.)

7

$\because \Delta$ EBC , $\square$ ABCD have the common base $\overline{BC}$

, E $\in \overline{AD}$

$\therefore$ The area of Δ BEC = $\frac{1}{2}$ The area of $\square$ ABCD
= $\frac{1}{2} \times 40 = 20$ cm^2

, $\because$ F is the midpoint of $\overline{CE}$

$\therefore \overline{BF}$ is a median in Δ BEC

$\therefore$ The area of Δ BEF = $\frac{1}{2}$ The area of Δ BEC
= $\frac{1}{2} \times 20 = 10$ cm^2 (The req.)

8

$\because \Delta$ EBC and $\square$ ABCD have the common base $\overline{BC}$

, $E \in \overline{AD}$

$\therefore$ The area of Δ EBC = $\frac{1}{2}$ The area of $\square$ ABCD (1)

, $\because \square$ ABCD and $\square$ ABMN have the common base $\overline{AB}$

, $\overline{AB} \parallel \overline{NC}$

$\therefore$ The area of $\square$ ABCD = The area of $\square$ ABMN (2)

From (1) and (2) :

$\therefore$ The area of Δ EBC = $\frac{1}{2}$ The area of $\square$ ABMN

(Q.E.D.)

9

$\because$ The two parallelograms ABCD and AEFD have the common base $\overline{AD}$

, $\overleftrightarrow{BF} \parallel \overline{AD}$

$\therefore$ The area of $\square$ ABCD = The area of $\square$ AEFD (1)

$\because \Delta$ ABX , $\square$ ABCD have the common base $\overline{AB}$

, $X \in \overleftrightarrow{DC}$

$\therefore$ The area of Δ ABX = $\frac{1}{2}$ The area of $\square$ ABCD (2)

$\because \Delta$ DFX and $\square$ AEFD have the common base $\overline{DF}$

, $X \in \overleftrightarrow{AE}$

$\therefore$ The area of Δ DFX = $\frac{1}{2}$ The area of $\square$ AEFD (3)

From (1) , (2) and (3) :

$\therefore$ The area of Δ ABX = The area of Δ DFX (Q.E.D.)

10

$\because \Delta\Delta$ ABC , DBC have the common base $\overline{BC}$

, $\overline{AD} \parallel \overline{BC}$

$\therefore$ The area of Δ ABC = The area of Δ DBC

Subtracting the area of Δ BMC from both sides

$\therefore$ The area of Δ AMB = The area of Δ DMC

(Q.E.D.)

11

$\because$ The area of Δ ABE = The area of Δ ACD

Subtracting the area of Δ ADE from both sides

$\therefore$ The area of Δ BDE = the area of Δ CDE

and they have the common base $\overline{DE}$ and on one side of it.

$\therefore \overline{DE} \parallel \overline{BC}$ (Q.E.D.)

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9